FISA DISCIPLINEI
Syllabus

1. Information about the program

1.1. University	West University of Timisoara
1.2. Faculty	PHYSICS
1.3. Department	PHYSICS
1.4. Study direction	PHYSICS
1.5. Study cycle	MASTER
1.6. Study program / qualification	METODE AVANSATE DE CERCETARE IN FIZICA/ ADVANCED RESEARCH METHODS IN PHYSICS

2. Subject matter information

2.1. Subject matter			**Specialization Practice** ARMP 2401				
2.2. Subject teacher							
2.3. Subject applications teacher (seminar / laboratory)			Professor Dr. Habil. Daniela Susan-Resiga Associate Professor Dr. Nicoleta Stefu				
2.4. Study year	1	2.5. Semester	1	2.6. Assessment type	**E**	2.7. Subject type	DS, DO

3. Study time distribution

3.1. Nr. of hours/week	8	In which: 3.2 course		3.3. seminar/laboratory/Projects	0/0/8
3.4. Total hours in educational plan	96	In which: 3.5 course		3.6. seminar/laboratory/ Projects	96

Time distribution:	**hours**
Study after lecture notes, bibliography or notes	100
Additional documentation in the library, electronic specialty platforms/ field	100
Seminar / laboratory preparations, homework, portfolio and essays	50
Tutoring	4
Exams	
Other activities...	-

3.7. **Total number of personal study hour**	254
3.8. **Total number of hours in semester**	350
3.9. **Number of credits**	14

4. Preconditions (where appropriate)

4.1. curriculum	•
4.2. Competences	• General competencies: the ability of analysis and synthesis; accumulation of basic general knowledge; proper use of

	terminology in physics and computer science in written and oral communication in English; Basic Skills PC operating; ability to work independently and in teams. • Professional Skills: identification and proper use of the main physical laws and principles in a given context; use of software packages for data analysis and processing.

5. Conditions (where appropiate)

5.3 for course	•
5.4 for seminar/lab	• PC

6. Objectives of the discipline - expected learning outcomes to the formation of which the completion and promotion of the discipline contribute

Knowledge	• to know the advanced notions in the field of Physics, which involves a critical understanding of theories and principles • to know the language specific to the field • to know physical phenomena and interpret them by formulating hypotheses and operationalizing key concepts and the appropriate use of laboratory equipment • to know the constructive and operating principles of the equipment for obtaining and characterizing materials and to explain how to use it
Skills	• to compare the theoretical results provided by the specialized literature with those of an experiment carried out within a professional project • To describe physical systems using specific theories and tools (experimental and theoretical models, algorithms, schemes, etc.) • to apply the principles and laws of physics in solving theoretical or practical problems, under conditions of qualified assistance • to characterize the specific properties of some materials taking into account the field in which they are used • to identify the most appropriate methods to develop new materials with well-defined properties
Responsibility and autonomy	• participate in some concrete physics experiments • to critically analyze a specialized report, scientific communication with a medium degree of difficulty in the field of physics • to be autonomous in the context of handling laboratory equipment, including in situations requiring an interdisciplinary approach • to autonomously use information sources and resources for communication and assisted professional training (Internet portals, specialized software

	applications, databases, online courses, etc.) both in Romanian and in a language of international circulation

7. Table of content

7.1 Course – 28 hours	**Teaching methods**	**Observations**
7.2 Seminar / labs/Projects	**Teaching methods**	**Observations/Bibliography**
• Structure of a scientific paper • Presentation of useful programs • Using Microsoft Word in writing a paper • Using LaTeX • Using Origin, Table Curve, and Maple for data processing and graphical representations • Including graphs in the text of the paper • Including equations in the text of the paper • Including bibliographic references in the text of the paper • Using anti-plagiarism software • Final verification	interactive discussions, presentation of examples, and tutorials	

8. Relation between subject content and the expectations of employers

Knowing and understanding the specific requirements for writing a project in the field of physics, forming and developing skills for using software tools to create a dissertation, cultivating a scientific environment based on values, professional ethics, and quality, are arguments that motivate the usefulness of this discipline for the training of a future physicist.

9. Assesment

Activity type	9.1 Assesment criteria	9.2 Assesment method	9.3 Percent in final mark
9.4 Course			
9.5. Seminar/labs/Projects	Students should apply the knowledge acquired during the practice in drafting a scientifically correct report and compliant with professional ethical standards.	Continuous assessment during the semester Final evaluation - presentation of the project made during the practice	50% continuous assessment during the semester 50% final evaluation
9.6 Minimum performance standards			
• Students should meet 50% of the requirements formulated during the semester. • Students should present the project in the appropriate format at the end of the semester.			

Completion date:15.02.2025

Subject teacher's signature:

Professor Dr. Habil. Daniela Susan-Resiga

Associate Professor Dr. Nicoleta Stefu

Department Director' Signature:
Associate Professor Dr. Nicoleta STEFU,