SYLLABUS

1. Information about the program

1.1 Higher education institution	UNIVERSITY POLITEHNICA OF TIMISOARA
1.2 Faculty[1]/ Department [2]	ELECTRONICS, TELECOMUNICATON AND INFORMATION TECHNOLOGIES/ Measurements and Optical Electronics
1.3 Field of study (name/code[3])	ELECTRONIC ENGINEERING, TELECOMUNICATION AND INFORMATION TECHNOLOGIES
1.4 Study cycle	License
1.5 Study program (name/code/qualification)	TST-ENG/20/20/10/100/10/TST-ENG

2. Information about the discipline

2.1 Name of discipline/ formative category[4]		Applied Informatics 1/DF					
2.2 Coordinator (holder) of course activities		Prof. Dr. Ing. (Abilitat) Codruta O. Ancuti					
2.3 Coordinator (holder) of applied activities[5]		Prof. Dr. Ing. (Abilitat) Codruta O. Ancuti					
2.4 Year of study[6]	1	**2.5** Semester	1	**2.6** Type of evaluation	D	**2.7** Regime of discipline[7]	DI

3. Total estimated time – hours / semester: direct teaching activities (fully assisted or partly assisted) and individual training activities (unassisted) [8]

3.1 Number of fully assisted hours / week	2 of which:	**3.2** course	1	**3.3** seminar / laboratory / project	0/1/0
3.1* Total number of fully assisted hours / semester	28 of which:	**3.2*** course	14	**3.3*** seminar / laboratory / project	0/14/0
3.4 Number of hours partially assisted / week	of which:	**3.5** training		**3.6** hours for diploma project elaboration	
3.4* Total number of hours partially assisted / semester	of which:	**3.5*** training		**3.6*** hours for diploma project elaboration	
3.7 Number of hours of unassisted activities / week	3.35 of which:	additional documentary hours in the library, on the specialized electronic platforms and on the field			1
		hours of individual study after manual, course support, bibliography and notes			1.85
		training seminars / laboratories, homework and papers, portfolios and essays			0.5
3.7* Number of hours of unassisted activities / semester	47 of which:	additional documentary hours in the library, on the specialized electronic platforms and on the field			14
		hours of individual study after manual, course support, bibliography and notes			26
		training seminars / laboratories, homework and papers, portfolios and essays			7
3.8 Total hours / week [9]	5.35				
3.8* Total hours /semester	75				
3.9 Number of credits	3				

4. Prerequisites (where applicable)

4.1 Curriculum	• Mathematics

4.2 Competencies	• mathematical and computational thinking skills

5. Conditions (where applicable)

5.1 of the course	• The classroom is equipped with a video projector and whiteboard
5.2 to conduct practical activities	• In accordance with the laboratory sheet

6. Specific competencies acquired through this discipline

Specific competencies	• Application of basic knowledge, concepts and methods for the acquisition and processing of experimental results • Solving technological problems in the fields of applied electronics using Matlab programming knowledge
Professional competencies ascribed to the specific competencies	• Application of the basic methods for signal acquisition and processing • Use of fundamentals related to devices, circuits, systems, instrumentation and electronic technology
Transversal competencies ascribed to the specific competencies	• Adaptation to new technologies, professional and personal development through continuous training, using printed documentation sources, specialized software and electronic resources in Romanian and at least one foreign language. •

7. Objectives of the discipline (based on the grid of specific competencies acquired - pct.6)

7.1 The general objective of the discipline	• Familiarization with the processing of experimental data and developing basic knowledge of programming using Matlab.
7.2 Specific objectives	• The accumulation of knowledge and the acquisition of practical skills in the field of electrical and electronic measurements and Matlab programing.

8. Content [10]

8.1 Course	Number of hours	Teaching methods [11]
Module 1: Introduction to Matlab and Data presentation in Statistics	2	The course is organized as exposure based on Power Point material available for students on Intranet. Students are involved through questions and
Module 2: Typical distributions of experimental data	3	
Module 3: Measurement errors and uncertainties	3	
Module 4: Data processing	2	
Module 5: Linear interpolation	2	
Module 6: Least squares method	1	
Module 7: Linear regression	1	

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[10] It details all the didactic activities foreseen in the curriculum (lectures and seminar themes, the list of laboratory works, the content of the stages of project preparation, the theme of each practice stage). The titles of the laboratory work carried out on the stands shall be accompanied by the notation "(*)".

[11] Presentation of the teaching methods will include the use of new technologies (e-mail, personalized web page, electronic resources etc.).

Bibliography [12] D. C. Montgomery, G. C. Runger"Applied Statistics and Probability for Engineers", John Wiley & Sons, Inc., New York, 2003
http:// www.itl.nist.gov/div898/handbook/index.htm
https://intranet.etc.upt.ro/~EDP/
https://cv.upt.ro/course/

8.2 Applied activities [13]	Number of hours	Teaching methods
Overview of MATLAB and its features Basic operations and syntax in MATLAB Basic statistics in MATLAB	4	Practical laboratory work is followed by discussion and analysis of the results
Data presentation Normal distribution	4	
Measurement errors and uncertainties Error detection and correction in Matlab	2	
Linear interpolation Linear regression	2	
Interpolation and regression in MATLAB	2	

Bibliography [14] D. C. Montgomery, G. C. Runger"Applied Statistics and Probability for Engineers", John Wiley & Sons, Inc., New York, 2003
MATLAB for Beginners: A Gentle Approach, Peter I. Kattan, Louisiana State University, Createspace, 2008, ISBN: 9781438203096
http:// www.itl.nist.gov/div898/handbook/index.htm
https://intranet.etc.upt.ro/~EDP/
https://cv.upt.ro/course

9. **Corroboration of the content of the discipline with the expectations of the main representatives of the epistemic community, professional associations and employers in the field afferent to the program**

- The course content was determined through discussions with employer representatives to provide theoretical information and practical understanding of the subject.

10. Evaluation

Type of activity	10.1 Evaluation criteria [15]	10.2 Evaluation methods	10.3 Share of the final grade
10.4 Course	The degree of understanding of the basic knowledge in the field.	Two written tests; date and place planned and announced in advance. The tests consist of applications covering course topics.	2/3
10.5 Applied activities	**S:**		
	L: Quality of reports on experimental results and personal observations.	Written reports	1/3
	P[16]**:**		
	Pr:		
10.6 Minimum performance standard (minimum amount of knowledge necessary to pass the discipline and the way in which this knowledge			

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[12] At least one title must belong to the discipline team and at least one title should refer to a reference work for discipline, national and international circulation, existing in the UPT library.
[13] Types of application activities are those specified in footnote 5. If the discipline contains several types of applicative activities then they are sequentially in the lines of the table below. The type of activity will be in a distinct line as: "Seminar:", "Laboratory:", "Project:" and / or "Practice/training".
[14] At least one title must belong to the discipline team.
[15] Syllabus must contain the procedure for assessing the discipline, specifying the criteria, methods and forms of assessment, as well as specifying the weightings assigned to them in the final grade. The evaluation criteria shall be formulated separately for each activity foreseen in the curriculum (course, seminar, laboratory, project). They will also refer to the forms of verification (homework, papers, etc.)
[16] In the case where the project is not a distinct discipline, this section also specifies how the outcome of the project evaluation makes the admission of the student conditional on the final assessment within the discipline.

is verified [17])
• At least 50% of the test exercises must have correct solutions.

Date of completion

29.08.2023

**Course coordinator
(signature)**

**Coordinator of applied activities
(signature)**

**Head of Department
(signature)**

Date of approval in the Faculty Council [18]

14.09.2023

**Dean
(signature)**

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[17] It will not explain how the promotion mark is awarded.
[18] The endorsement is preceded by the discussion of the board's view of the study program on the discipline record.