SYLLABUS [1]

THIS COURSE UNIT IS TAUGHT IN ROMANIAN LANGUAGE

1. Information about the program

1.1 Higher education institution	Universitatea Politehnica Timişoara
1.2 Faculty[2]/ Department [3]	Mecanică / Ingineria Materialelor şi Fabricatiei
1.3 Chair	—
1.4 Field of study (name/code[4])	Materials Engineering
1.5 Study cycle	Bachelor
1.6 Study program (name/code/qualification)	Materials Science

2. Information about the discipline

2.1 Name of discipline/ formative category[5]	Fabrication Processes Basis						
2.2 Coordinator (holder) of course activities	S.L. dr. ing. TURC Cristian-Gheorghe						
2.3 Coordinator (holder) of applied activities[6]	S.L. dr. ing. TURC Cristian-Gheorghe						
2.4 Year of study[7]	3	**2.5** Semester	5	**2.6** Type of evaluation	E	**2.7** Type of discipline[8]	DS

3. Total estimated time – hours / semester: direct teaching activities (fully assisted or partly assisted) and individual training activities (unassisted) [9]

3.1 Number of fully assisted hours / week	5 of which:	**3.2** course	2	**3.3** seminar / laboratory / project	3
3.1* Total number of fully assisted hours / semester	70 of which:	**3.2*** course	28	**3.3*** seminar / laboratory / project	42
3.4 Number of hours partially assisted / week	5 of which:	**3.5** training	5	**3.6** hours for diploma project elaboration	
3.4* Total number of hours partially assisted / semester	70 of which:	**3.5*** training	70	**3.6*** hours for diploma project elaboration	
3.7 Number of hours of unassisted activities / week	5,57 of which:	additional documentary hours in the library, on the specialized electronic platforms and on the field			0,57
		hours of individual study after manual, course support, bibliography and notes			2,86
		training seminars / laboratories, homework and papers, portfolios and essays			2,14
3.7* Number of hours of unassisted activities / semester	78 of which:	additional documentary hours in the library, on the specialized electronic platforms and on the field			8
		hours of individual study after manual, course support, bibliography and notes			40
		training seminars / laboratories, homework and papers, portfolios and essays			30
3.8 Total hours / week [10]	15,57				
3.8* Total hours /semester	218				
3.9 Number of credits	6				

4. Prerequisites (where applicable)

4.1 Curriculum	•

[1] The form corresponds to the Discipline File promoted by OMECTS 5703 / 18.12.2011 and to the requirements of the ARACIS Specific Standards valid from 01.10.2017.
[2] The name of the faculty which manages the educational curriculum to which the discipline belongs
[3] The name of the department entrusted with the discipline, and to which the course coordinator/holder belongs.
[4] The code provided in HG no.140 / 16.03.2017 or similar HGs updated annually shall be entered.
[5] Discipline falls under the educational curriculum in one of the following formative disciplines: Basic Discipline (DF), Domain Discipline (DD), Specialist Discipline (DS) or Complementary Discipline (DC).
[6] Application activities refer to: seminar (S) / laboratory (L) / project (P) / practice/training (Pr).
[7] Year of studies in which the discipline is provided in the curriculum.
[8] Discipline may have one of the following regimes: imposed discipline (DI), optional discipline (DO) or optional discipline (Df).
[9] The number of hours in the headings 3.1 *, 3.2 *, ..., 3.8 * is obtained by multiplying by 14 (weeks) the number of hours in headings 3.1, 3.2, ..., 3.8. The information in sections 3.1, 3.4 and 3.7 is the verification keys used by ARACIS as: (3.1) + (3.4) ≥ 28 hours / wk. and (3.8) ≤ 40 hours / wk.
[10] The total number of hours / week is obtained by summing up the number of hours in points 3.1, 3.4 and 3.7.

4.2 Competencies	•

5. Conditions (where applicable)

5.1 of the course	•
5.2 to conduct practical activities	• TCM Laboratory

6. Specific competencies acquired through this discipline

Specific competencies	• Elaboration of technological manufacturing processes • Design and operation of manufacturing equipment • Planning, management and quality assurance of manufacturing processes
Professional competencies ascribed to the specific competencies	• Elaboration of technological manufacturing processes • Design and operation of manufacturing equipment • Planning, management and quality assurance of manufacturing processes
Transversal competencies ascribed to the specific competencies	• Applying the values and ethics of the engineering profession, and responsible execution of professional tasks in conditions of limited autonomy and qualified assistance. Promoting logical, convergent and divergent reasoning, practical applicability, evaluation and self-evaluation in decision making • Objective self-assessment of the need for continuous professional training in order to enter the labor market and adapt to the dynamics of its requirements.

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

7.1 The general objective of the discipline	• Knowledge of issues related to mechanical manufacturing technologies, assimilation of knowledge related to mechanical manufacturing processes, equipment, machine tools, tools and specific devices, and mastering the general methodology for designing technological processes specific to mechanical manufacturing.
7.2 Specific objectives	• Elaboration of technological manufacturing processes • Operation of manufacturing equipment • Planning of manufacturing processes

8. Content [11]

8.1 Course	Number of hours	Teaching methods [12]
Introductory notions in mechanical manufacturing.	2	Lecture, presentation, demonstration, explanation, exemplification, debate, conversation, case study, problematization, Debate, use of ICT
Types of production.	2	
The manufacturability of the parts.	2	
Notions of cutting theory.	6	
Turning processing technologies.	2	
Milling processing technologies.	3	
Bore processing technologies.	2	

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

Machining technologies on numerically controlled machine tools.	6	techniques, video animation.
Gear processing technologies.	3	

Bibliography [13]

1. Drăghici, G., Concepţia proceselor de prelucrare mecanică, Editura Politehnica, Timişoara, 2005;
2. Nica, M., Serban, V., Turc, C. ș.a., Materiale metalice si tehnologii . Editura Politehnica , Timisoara 2002
3. Tschätsch, H., Applied Machining Technology, Springer 2009.

8.2 Applied activities [14]	Number of hours	Teaching methods
Laboratory:		Presentation, explanation, exemplification, demonstration, case study.
1. Turning processes.	14	
2. Milling processing processes.	8	
3. Statistical control of machining accuracy.	6	
Project:		
1. Analysis of the part design. Structure of the manufacturing process.	3	
2. Choice of machine tools and cutting tools.	3	
3. Establishing cutting regimes.	3	
4. CNC programming.	5	

Bibliography [15]

1. Drăghici, G., Concepţia proceselor de prelucrare mecanică, Editura Politehnica, Timişoara, 2005;
2. Nica, M., Serban, V., Turc, C. ș.a., Materiale metalice si tehnologii . Editura Politehnica , Timisoara 2002
3. Micșa, I., Nica, M., Turc, C. ș.a., TCM – Îndrumător de laborator, Lito UPT 1995.

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

- Through the topics approached, this discipline is of great interest in both academia and industry.
- Periodically, during the contacts with the industrial environment, the opinion of the representatives of the industrial units regarding the preferences regarding the knowledge and the qualities appreciated in the selection for employment is requested.
- These opinions are discussed in board meetings of the field of Industrial Engineering and, based on the conclusions, the curricula and / or the content of some disciplines are modified to meet the requirements of the industrial environment.

10. Evaluation

Type of activity	**10.1** Evaluation criteria [16]	**10.2** Evaluation methods	**10.3** Share of the final grade
10.4 Course	Grade 5 is given for knowledge of 50% of each exam subject, and grade 10 for knowledge of 100% of each exam subject.	Summative evaluation through a written paper, which consists of a theoretical topic developed in extenso, a series of questions with short answers, and an application.	2/3
10.5 Applied activities	**S:**		
	L: Grade 5 is awarded for the correct resolution of 50% of the laboratory content, and grade 10 for the correct resolution of 100% of the laboratory.	Summative evaluation of the content of the laboratory activities.	1/6

[13] 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.
[14] 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".
[15] At least one title must belong to the discipline team.
[16] 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.)

	P[17]**:** Grade 5 is awarded for the correct resolution of 50% of the project content, and grade 10 for the correct resolution of 100% of the project.	Summative evaluation of the content of the realized project	1/6
	Pr:		

10.6 Minimum performance standard (minimum amount of knowledge necessary to pass the discipline and the way in which this knowledge is verified [18])

- The graduation of the discipline requires the knowledge of a minimum volume of knowledge of 50% of the total volume of knowledge taught.
- The verification of the minimum volume of knowledge is done by summative evaluation.

Date of completion	**Course coordinator (signature)**	**Coordinator of applied activities (signature)**
	……	……
Head of Department (signature)	**Date of approval in the Faculty Council** [19]	**Dean (signature)**
……		……

[17] 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.

[18] It will not explain how the promotion mark is awarded.

[19] The endorsement is preceded by the discussion of the board's view of the study program on the discipline record.