SYLLABUS [1]

THIS COURSE UNIT IS TAUGHT IN ROMANIAN LANGUAGE

1. Information about the program

1.1 Higher education institution	Politehnica University Timisoara
1.2 Faculty[2] / Department[3]	Mechanical Faculty/Dep.of Materials and Manufacturing Engineering
1.3 Chair	—
1.4 Field of study (name/code[4])	Industrial Engineering/10
1.5 Study cycle	Master
1.6 Study program (name/code/qualification)	Engineering of polymer and composite products /423

2. Information about discipline

2.1 Name of discipline/The educational classe[5]			IndustrialManagement				
2.2 Coordinator (holder) of course activities			Prof.dr.ing.&ec. Dumitru ȚUCU și Ș.L.dr.ing. Felicia BANCIU				
2.3 Coordinator (holder) of applied activities[6]			Ș.L.dr.ing. Felicia BANCIU				
2.4 Year of study[7]	2	**2.5** Semester	3	**2.6** Type of evaluation	E	**2.7** Type of discipline[8]	DS

3. **Total estimated time** (direct activities (fully assisted), partially assisted activities and unassisted activities[9])

3.1 Number of hours fully assisted/week	4 ,of which:	**3.2** course	2	**3.3** seminar/laboratory/project			0/0/2
3.1* Total number of hours fully assisted/sem.	56 ,of which:	**3.2*** course	28	**3.3*** seminar/laboratory/project			0/0/28
3.4 Number of hours partially assisted/week	,of which:	**3.5** project, research		**3.6** training		**3.7** hours designing M.A. dizertation	
3.4* Number of hours pasrtially assisted/ semester	,of which:	**3.5*** project of research		**3.6*** training		**3.7*** hours designing M.A. dizertation	
3.8 Number of hours of unassisted activities/ week	3.25 ,of which:	Additional documentation in the library, on specialized electronic platforms, and on the field					1.25
		Study using a manual, course materials, bibliography and lecture notes					1
		Preparation of seminars/ laboratories, homework, assignments, portfolios, and essays					1
3.8* Total number of hours of unasssited asctivities/ semester	45 ,of which:	Additional documentation in the library, on specialized electronic platforms, and on the field					17
		Study using a manual, course materials, bibliography and lecture notes					14
		Preparation of seminars/ laboratories, homework, assignments, portfolios, and essays					14
3.9 Total hrs./week[10]	7.25						
3.9* Total hrs./semester	101						
3.10 No. of credits	8						

4. **Prerequisites** (where applicable)

4.1 Curriculum	• Algebra, Mathematical Analysis, Technology, Materials Science, Materials

[1] The form corresponds to the Syllabus promoted by OMECTS 5703/18.12.2011 (Annex 3), updated based on the Specific Standards ARACIS of December 2016.
[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] Fill in the code provided in HG no. 376/18.05.2016 or in HG similars annually updated.
[5] The educational classes of disciplines (ARACIS – specific standards, art./paragraph 4.1.2.a) are: fundamental disciplines, field disciplines, majoring/specialization disciplines.
[6] The applied activities refer to: seminar (S) / laboratory (L) / project (P) / practice/training (Pr).
[7] The year of study to which the discipline is provided in the curriculum .
[8] The types of disciplines (ARACIS – specific standards, art./paragraph 4.1.2.a) are: extended knowledge discipline / advanced knowledge discipline and synthetic discipline (DA / DCAV and DS) or art./paragraph 4.1.2 b) complementary discipline (DC)).
[9] Within UPT, the number of hours from 3.1*, 3.2*,…,3.9* are obtained by multipling by 14 (weeks) the number of hours from 3.1, 3.2,…, 3.9.
[10] The total number of hours/week is obtained by summing up the number of hours from 3.1, 3.4 şi 3.8.

	Strength, Microeconomics
4.2 Competencies	• no

5. Conditions (where applicable)

5.1 of the course	•
5.2 to conduct practical activities	•

6. Specific competencies acquired through this discipline

Specific competencies	• Development of professional and / or research projects, innovatively using a wide range of quantitative and qualitative methods • Innovative use of advanced knowledge about materials and manufacturing technologies for the analysis, explanation and pertinent interpretation of some theoretical and practical problems of design or manufacturing process in the specialization of the master • Innovative use of concepts, principles, methods and tools of control and management of manufacturing for the organization and management of directly productive manufacturing processes and related to the processing of polymeric and composite materials
Professional competencies ascribed to the specific competencies	• C1. Solving complex tasks, specific to Industrial Engineering using advanced knowledge of engineering sciences • • C3 Advanced knowledge of CAD / CAM / CAE assisted design tools and their use for solving design tasks of high complexity products, made of polymeric and composite materials, and injection molds • • C4 Organization, planning and optimal management of the directly productive activity and related to the processing of polymeric and composite materials • C5. Conception, implementation and coordination of the quality management system for manufacturing processes of plastic and composite products • • C6 Elaboration and management of professional and / or research projects using the acquired knowledge and engineering skills.
Transversal competencies ascribed to the specific competencies	• CT1. Executarea unor sarcini profesionale complexe în condiţii de autonomie şi de independenţă profesională • CT2. Asumarea de roluri/funcţii de conducere a activităţii grupurilor profesionale sau a unor instituţii • CT3. Autocontrolul procesului de învăţare, diagnoza nevoilor de formare, analiza reflexivă a propriei activităţi profesionale

7. Objectives of the discipline (based on the grid of specific competemcies acquired)

7.1 The general objective of the discipline	• Students acquire, systemically, the basic knowledge in the field of industrial and process management, the life cycle of complex process engineering systems, with reference to the needs of design and integration of processes and environmental implications
7.2 Specific objectives	• Familiarization with the terminology, methods and typical specific notions, aiming at the elements of industrial management • • Learning methods of analysis and optimization of industrial manufacturing processes • • Project evaluation by applying life cycle precepts

8. Content

8.1 Course	Number of hours	Teaching methods
The concept of systems and process engineering. Typology of process systems	1	Logical and deductive presentation, explanation, debate, problematization, group work methods, study of curricular documents and bibliography, Heuristic methods
Methods of analysis in process systems engineering	2	
Models and meta-models in process systems engineering	3	
	4	
Process analysis and evaluation in process systems engineering	2	
Specific activities and tools in process systems engineering	2	
Product life cycle and associated costs	2	
industrial engineering and management concept t	2	
Organisational structure. Management functions	2	
The notion of project, types of projects, project structure. Group work. Project teams, Choice of project team. Management / leadership	2	

Technical project planning. Resource allocation.	3	
Realization and follow-up of technical projects	3	
Risk Management	2	

Bibliography[11]

1. Dumitru Tucu – Management industrial, Suport curs scris si electronic
2. Banciu Felicia –Management industrial , Suport curs scris și electronic
3. Dumitru Tucu – Ingineria sistemelor de proces, Ed. Eurostampa 2012,
4. Dumitru Tucu – Opimizarea costurilor calitatii, Ed. Eurostampa 2010,
5. Dumitru Tucu – Opimizarea costurilor calitatii în sistemele industriale, Ed. Eurostampa 2016
6. Overview of the System Engineering Process, Ed Ryen, PE Maintenance – ITS, March 2008Life Cycle Cost Analysis Handbook – 1st Edition, State of Alaska Department of Education & Early Development Juneau, Alaska, 1999
7. Code of Practice for Life Cycle Costing, RTO-SAS-069, 2009
8. M. Popa, D. Lungescu, I. Salanta (2013), Management Concepte, tehnici, abilitati, Ed. Presa Universitara Clujeana, ISBN 978-973-595-569-4
9. Ion Sorici, Adela Eliza Dumitrascu, Valentina Ciobanu, (2010), Managementul proiectelor si dezvoltarea durabila, ed. Universitatii Transilvania din Brasov
10. Burton, C . A Practical Guide to Project Management, Kogan Page, London, 1997
11. 10.Helms R. W. - Product Data Management as enabler for Concurrent Engineering, Eindhoven University of Technology, 2002
12. Initiation PLM. Travaux Dirigés, http://cao.etudes.ecp.fr/index.php?page=td.htm
13. AdaComputer, PLM http://adacomputers.ro/ro/plm , Proiect PLM Adaptor, 2010
14. Chase R., Jacobs R, Aquilano N. , Operations management for competitive advantage, Mc Graw Hill, 2006

8.2 Applied activities[12]	Number of hours	Teaching methods
Analyzing the specifics of the project field. the notion of technical design. Examples. Duration of a project. Partners. Examples	2	Interactive methods. Discussions, explanations, examples, case studies. Thematic discussions focused on the materials available to students
Project justification / Analysis of the problem that the project wants to solve. The purpose and objectives of the project. Cause-effect diagram. Project team - team component	2	
Project activities. Structural analysis - Mind Manager; IgrafX	4	
Allocation of resources and costs related to activities. Gantt chartt	4	
Allocation of resources and costs related to activities. The critical path	4	Interactive methods. Discussions, explanations, examples, case studies. Thematic discussions focused on the materials available to students
Risk analysis. Their identification, probability of occurrence and impact. Risk management matrix	4	Interactive methods. Discussions, explanations, examples, case studies. Thematic discussions focused on the materials available to students
Selection and analysis of the manufacturing process. Manufacturing line management. TQM-Six Sigma tools	8	Interactive methods. Discussions, explanations,

[11] At least one title must belong to the department staff teaching the discipline, and at least one title must refer to a relevant work for the discipline, a national and international work that can be found in the UPT Library.

[12] The types of applied activities are those mentioned in 5. If the discipline containes more types of applied activities then they are marked, consecutively, in the table below. The type of activity will be marked distinctively under the form: „Seminar:", „Laboratory:", „Project:" and/or „Practice/Training:".

		examples, case studies. Thematic discussions focused on the materials available to students

Bibliography[13]

1. Banciu Felicia –Management industrial , Suport curs scris și electronic
2. Dumitru Tucu – Ingineria sistemelor de proces, Ed. Eurostampa 2012,
3. Dumitru Tucu – Management industrial, Suport curs scris si electronic
4. M. Popa, D. Lungescu, I. Salanta (2013), Management Concepte, tehnici, abilitati, Ed. Presa Universitara Clujeana, ISBN 978-973-595-569-4
5. Ion Sorici, Adela Eliza Dumitrascu, Valentina Ciobanu, (2010), Managementul proiectelor si dezvoltarea durabila, ed. Universitatii Transilvania din Brasov
6. Burton, C . A Practical Guide to Project Management, Kogan Page, London, 1997
7. https://www.igrafx.com/use-cases/disciplines/process-modeling
8. Free project management and task , https://www.bitrix24.com
9. https://www.lucidchart.com/pages/pert-chart-critical-path-method

9. Coroboration 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

- Adjusting the content of the discipline following discussions with representatives of employers from Continental, Saab Casting, Mahle, Dosetimpex, Dura System Engineering, Frigoglass, etc.

10. Evaluation

Type of activity	**10.1** Evaluation criteria[14]	**10.2** Evaluation methods	**10.3** Share of the final grade
10.4 Course	10.4.1 Understanding and accumulating knowledge 10.4.2 Abilities to use methods 10.4.3 Hearing course	10.4.1 through 3 subjects, oral examination 10.4.2 Testing the abilities to use a method in an application during verifications 10.4.3 Granting bonuses for the presence	66%
10.5 Applied activities	**S:**		
	L:		
	P: 10.5.1 Understanding and accumulating knowledge 10.5.2 Abilities to use methods 10.5.3 Hearing course	active presence of project meetings (answers to questions, additions, debates, etc.) Weekly verification of projects and progress from one week to another; - supporting the projects through a short oral presentation of 20 minutes (PowerPoint presentation or other utility) in which to demonstrate the understanding, utilities and application of models, methods and means presented in progress and discussed in the project meetings Presentation and debates on the given topics	34%
	Pr:		
	Tc-R[15]:		
10.6 Minimum performance standard (minimum amount of knowledge necessary to pass the discipline and the way in which this knowledge is verified[16]			
• Knowledge and application of a method of design / optimization of manufacturing processes • • Evaluation of a project based on the life cycle • • Quality assessment			

[13] At least one title must belong to the staff teaching the discipline.
[14] The Syllabus must contain the evaluation method of the discipline, specifying the criteria, the metods and the forms of evaluation, as well as mentioning the share attached to these within the final mark. The evaluation criteria must correspond to all activities stipulated in the curriculum (course, seminar, laboratory, project), as well as to the methods of continuous assessment (homework, essays etc.)
[15] Tc-R= Homework-Reports
[16] For this point turn to "Ghid de completare a Fișei disciplinei" found at: http://univagora.ro/m/filer_public/2012/10/21/ghid_de_completare_fisa_disciplinei.pdf

- • Verification through applications based on the analysis of stages and results

Date of completion	Course coordinator (signature)	Coordinator of applied activities (signature)
9.12.2020	/	
Head of Department (signature)	**Date of approval in the Faculty Council [17]**	**Dean (signature)**

[17] The approval is preceeded by discussing the study program's board's point of view with redgards to the syllabus.