DISCIPLINE SHEET

1. Data about program

1. Data about program		
1.1 Academic institution	1.1 Institution of higher	UNIVERSITY OF ORADEA
	education	
1.2 Faculty	1.2 Faculty	FACULTY OF ENVIRONMENTAL
-		PROTECTION
1.3 Department	1.3 Department	FOOD ENGINEERING
1.4 Field of study	1.4 Field of study	FOOD ENGINEERING
1.5 Cycle of study	1.5 Cycle studies	BACHELOR
1.6 Study	1.6	TPPA/ ENGINEER
programme/Qualification	Curriculum/Qualifications	

2. Data about the disciplines

2.1 Name of discip	Name of discipline			ELEMENTS OF MECHANICAL ENGINEERING			
2.2 Course holder			Lecturer dr.eng. IANCU CARMEN VIOLETA				
2.3 Laboratory hold	ler		Lect	Lecturer dr.eng. IANCU CARMEN VIOLETA		N VIOLETA	
2.4 Year of study	Ι	2.5 Semester	Ι	2.6 Type of	Ex	2.7 Regime of	Ob
				evaluation		discipline	

Ob – Compulsory; As – associated; Op – Optional.

3. Total estimated time (hours per semester of didactic activities)

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3.1 Number of hours per week		3	3.2 out of which:	2	3.3 out of which	1
			course		laboratory	
3.4 Total hours in the curriculum	4	42	3.5 out of which:	28	3.6 out of which	14
			course		laboratory	
Time allotment						hours
Study assisted by manual, course support, bibliography and notes				11		
Additional documentation in the library/ on specialised electronic platforms and in the field					11	
Preparation of seminars/laboratories/ topics/reports, portfolios and essays					26	
Tutorship					-	
Examinations					4	
Additional documentation in the library/ on specialised electronic platforms and in the field			6			
3.7 Total hours of individual 58	3					
study						
3.9 Total hours per semester 10)0					
3.10 Number of credits	4					

4. Prerequisites (where appropriate)

4.1 curriculum	Mechanical elements
4.2 competences	Knowledge of laboratory equipment

5. Conditions (where appropriate)

5.1. related to course	• Students will not be present at lectures, seminars/laboratories with mobile phones. It also will not be tolerated during phone calls, nor leaving by the students of the course with a view to taking over personal telephone calls;Nu va fi tolerată întârzierea studenților la curs și laborator întrucât aceasta se dovedește disruptivă la adresa procesului educational.
5.2. related to seminar/laboratory/ project	 The term teaching seminar work shall be established by agreement with the holder of the students. Will not be accepting applications for deferment thereof on grounds other than objective grounds. Also, for the teaching of the late works of seminar/lab work will be
	depunctate with 1 point per day of delay.

6. Spec	ific competences acquired
Professional 5 competences	 C2 Coordination of activities and processes on the basis of technical specifications C3 Analysis of technical solutions necessary to improve the quality of foodstuffs and for reducing costs and developing specific, monitoring and implementation of new technical projects C4 Planning, organizing and coordinating the activities of commercial and marketing in the food's profile

7. Objectives of discipline (coming from the specific competences acquired)

7.1 General objective	 Knowledge of the materials used in the construction of machinery and food plants; Knowledge in terms of design, functional, operational and maintenance of facilities, equipment, machinery and machinery used in the processes of washing, sieving, transport, shredding, sedimentation, filtering, mixing, heating, fermentation, pasteurization, condensation and drying processes of the food industry.
7.2 Specific objectives	 The application of the basic principles and methods for problem solving, well-defined situations typical domain Laboratory works are so designed as to provide The future of food engineers practical skills relating to research, operation, repair and maintenance of the food industry. The contents of the laboratory works presented are based on the need to further examine the issues presented at the course. Will understand the complexity and usefulness of these outfits and they will treat you as such. Knowledge is useful in the formation of habits relating to addressing specific problems faced by a specialist in the field of food industry.

8. Content *

8.1 Co	urse	Methods of teaching	No. of hours/Re marks
1.	Materials used in the food industry	Interactive lecture with video projector	2
2.	Heat treatments applied to materials	Interactive lecture with video projector	2
3.	Criteria for choosing materials	Interactive lecture with video projector	2
4.	Fe-C diagram	Interactive lecture with video projector	2
5.	Study of the structure of alloy steels and gray cast irons	Interactive lecture with video projector	2
6.	Machine parts for removable assemblies. Threaded assemblies. bolts	Interactive lecture with video projector	2
7.	Feather assemblies. a. transverse penis b. longitudinal penis	Interactive lecture with video projector	2
8.	Groove joints - rectangular profile - triangular profile - evolutionary profile	Interactive lecture with video projector	2

9. Machine parts for non-removable assemblies. Rivet assemblies	Interactive lecture with video projector	
- resistance rivets;		2
- sealing rivets;		
- resistance and sealing rivets		
10. Non-removable joints by welding	Interactive lecture with video	
- electric welding;	projector	
- oxyacetylene welding;		
- plasma welding;		
- pressure welding;		2
- laser welding;		2
- electron flux welding		
- butt welded joints;		
- corner welded joints;		
- point joints		
11. Non-removable joints by gluing	Interactive lecture with video	
- soft bonding	projector	
- hard bonding		2
- overlapping method;		
- circular method		
12. Elastic assembly by means of springs	Interactive lecture with video	
- springs for exerting a permanent elastic force	projector	
- damping springs		
- springs to limit forces		2
- springs for measuring forces		
- springs for energy storage		
- springs for force		
13. Bearings	Interactive lecture with video	
- plain friction bearings;	projector	2
- rolling friction bearings;		2
- combined bearings.		
14. Shafts and axles	Interactive lecture with video	
- straight trees;	projector	
- crankshafts;		
- flexible shafts		
- horizontal trees;		2
- vertical shafts;		
- inclined shafts		
- fixed axles;		
- moving axles		
8.2. Laboratory		
1. Specific rules for the protection of labour.	Presentation by the didactic	
2. Analysis of materials used in the food industry	Coordinator of the laboratory	
	works of notions related to	2
	specific safety Demonstration,	
	food idustria analysis,	
3. Microscopic research of materials and preparation of	determination and exposure	
metallographic samples	Demonstration, analysis, and exposure	2
	Demonstration, analysis, and	
0	exposure	2
by temperature, humidity, electrochemical action and the	enposure	2
presence of harmful particles.	Domonstration analyzic and	
5. Fe-C diagram analysis	Demonstration, analysis, and exposure	2
6. Analysis and determinations of threaded assemblies	Demonstration, analysis, and	
Analysis and demonstrations for transverse wedge-	exposure	2
longitudinal wedge assemblies	-	-
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7. Analysis and demonstration of groove assemblies - rectangular profile Demonstration, analysis, and exposure 2 8. Analysis and demonstrations of non-removable assemblies. Rivet assemblies - resistance rivets; - resistance and sealing rivets Demonstration, analysis, and exposure 2 9. Analysis and demonstrations of non-removable assemblies - resistance and sealing rivets Demonstration, analysis, and exposure 2 9. Analysis and demonstrations of non-removable welded assemblies - electric welding; - plasma welding; - pressure welding; - parsane welding; - electron flux welding - butt welded joints; - corner welded joints; - point joints Demonstration, analysis, and exposure 2 10. Analysis and demonstration of non-removable joints by gluing - soft bonding - hard bonding - overlapping method; - circular method Demonstration, analysis, and exposure 2 11. Analysis and demonstration of spring-loaded elastic assembly - springs for energy storage - springs for energy storage - springs for energy storage - springs for force regulation Demonstration, analysis, and exposure 2 12. Bearing system analysis and demonstrations - traing friction bearings; - colling friction bearings; - cratical shafts; - flexible shafts - horizontal trees; - vertical shafts; Demonstration, analysis, and exposure 2			
- triangular profile - evolutionary profile28. Analysis and demonstrations of non-removable assemblies. Rivet assemblies - resistance invets; - sealing rivets; - resistance and sealing rivetsDemonstration, analysis, and exposure9. Analysis and demonstrations of non-removable welded assemblies - electric welding; - plasm awelding; - point jointsDemonstration, analysis, and exposure9. Analysis and demonstrations of non-removable welded assemblies - electric welding; - pressure welding; - laser welding; - electron flux welding - electron flux welding - electron flux welding - other welded joints; - corner welded joints; - corner welded joints; - corner welded joints; - corner welded joints; - point jointsDemonstration, analysis, and exposure10. Analysis and demonstration of non-removable joints by gluing - soft bonding - overlapping method; - circular methodDemonstration, analysis, and exposure11. Analysis and demonstration of spring-loaded elastic assembly - springs for energy storage - springs for force regulationDemonstration, analysis, and exposure12. Bearing system analysis and demonstrations - plain friction bearings; - combined bearings; - combined bearings; - rolling friction bearings; - retical shafts; - flexible shafts; - flexible shafts; - wertical shafts; - wertical shafts; - vertical shafts; - vertical shafts; - vertical shafts; - vertical shafts; - vertical shafts; - vertical shafts;Demonstration,	7. Analysis and demonstration of groove assemblies	Demonstration, analysis, and	
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12. Bearing system analysis and demonstrations - plain friction bearings; - rolling friction bearings; - combined bearingsDemonstration, analysis, and exposure213. Analysis and demonstrations on shafts and axles - straight trees; - crankshafts; - flexible shafts - horizontal trees; - vertical shafts;Demonstration, analysis, and exposure222	- springs for energy storage		
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- rolling friction bearings; - combined bearingsexposure213. Analysis and demonstrations on shafts and axles - straight trees; - crankshafts; - flexible shafts - horizontal trees; - vertical shafts;Demonstration, analysis, and exposure222	12. Bearing system analysis and demonstrations		
- rolling friction bearings; exposure - combined bearings Person analysis, and exposure 13. Analysis and demonstrations on shafts and axles Demonstration, analysis, and exposure - straight trees; - crankshafts; - flexible shafts - horizontal trees; - vertical shafts; 2	- plain friction bearings;	Demonstration, analysis, and	2
13. Analysis and demonstrations on shafts and axles - straight trees; - crankshafts; - flexible shafts - horizontal trees; - vertical shafts;Demonstration, analysis, and exposure2	- rolling friction bearings;	exposure	2
13. Analysis and demonstrations on shafts and axles - straight trees; - crankshafts; - flexible shafts - horizontal trees; - vertical shafts;Demonstration, analysis, and exposure2			
 straight trees; crankshafts; flexible shafts horizontal trees; vertical shafts; 		Demonstration, analysis, and	
 - crankshafts; - flexible shafts - horizontal trees; - vertical shafts; 		•	
 flexible shafts horizontal trees; vertical shafts; 			
- horizontal trees; - vertical shafts; 2			
- vertical shafts;			2
- inclined shafts	- inclined shafts		
- fixed axles;			
- moving axles	· · · · · · · · · · · · · · · · · · ·		
14. Analysis and determinations regarding threaded Demonstration, analysis, and		Demonstration, analysis, and	
assemblies exposure		-	
Analysis and demonstrations for transverse wedge-		•	2
longitudinal wedge assemblies	•		
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9. Corroboration of discipline content with the expectations of the epistemic community, professional associations and representative employers from the field corresponding to the study programme

The content is adapted to discipline and meet the requirements of the labour market, being agreed by social partners, professional associations and employers in the field of licensing programme. The content of the discipline can be found in the curricula of the specialisation of CEPA and other universities from Romania who approved these specializations, so knowledge of the basic concepts is a critical requirement of the employers in the field of industry food

Type of activity	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Share in the final grade
10.4 Course	for note 5– knowledge of material 50% for note 10 – knowledge of material 100%	Summative assessment- sample exam-written or oral	80%
10.5 Seminar	-	-	-
10.6	Test with 5 questions at the end of	Continuous evaluation in	10%
Laboratory	the laboratory works	the laboratory; knowledge verification laboratory	10%
10.7 Project	-	-	-

10.8 Minimum standard of performance

- Elaboration of a project or process specific food industry equipment, using concepts, theories and methods in the field
- The development of a technological project
- Preparation of a technical study by the efficient use of resources and sources of relevant and current documentation (including internet, databases, online courses.

Date of completion	Signature of course holder
01.06.2023	Lecturer dr.eng. Iancu Carmen
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Date of approval in the department

Signature of the Head of Department Assoc.Prof.PHD.Eng.Timar Adrian <u>atimar@uoradea.ro</u>

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