

DISCIPLINE SHEET

1. Data about program

1.1 Academic institution	1.1 Institution of higher education	UNIVERSITY OF ORADEA
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 programme/Qualification	1.6 Curriculum/Qualifications	CEPA/ ENGINEER

2. Data about the disciplines

2.1 Name of discipline	ELEMENTS OF ELECTRICAL ENGINEERING						
2.2 Course holder	Lecturer dr.eng. IANCU CARMEN VIOLETA						
2.3 Laboratory holder	Lecturer dr.eng. IANCU CARMEN VIOLETA						
2.4 Year of study	I	2.5 Semester	I	2.6 Type of evaluation	Ex	2.7 Regime of discipline	Ob

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

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

3.1 Number of hours per week	4	3.2 out of which: course	2	3.3 out of which laboratory	2
3.4 Total hours in the curriculum	56	3.5 out of which: course	28	3.6 out of which laboratory	28
Time allotment					hours
Study assisted by manual, course support, bibliography and notes					15
Additional documentation in the library/ on specialised electronic platforms and in the field					15
Preparation of seminars/laboratories/ topics/reports, portfolios and essays					29
Tutorship					-
Examinations					4
Additional documentation in the library/ on specialised electronic platforms and in the field					6
3.7 Total hours of individual study	69				
3.9 Total hours per semester	125				
3.10 Number of credits	5				

4. Prerequisites (where appropriate)

4.1 curriculum	Electricity elements
4.2 competences	Knowledge of laboratory equipment

5. Conditions (where appropriate)

5.1. related to course	<ul style="list-style-type: none"> 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 educațional.
5.2. related to seminar/laboratory/ project	<ul style="list-style-type: none"> 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. Specific competences acquired	

Professional competences	<ul style="list-style-type: none"> • 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
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7. Objectives of discipline (coming from the specific competences acquired)

7.1 General objective	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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 Course	Methods of teaching	No. of hours/Remarks
1. Introduction to electricity.	Interactive lecture with video projector	2
2. Electrostatic.	Interactive lecture with video projector	2
3. DC circuits.	Interactive lecture with video projector	2
4. AC circuits.	Interactive lecture with video projector	2
5. Three phase circuits	Interactive lecture with video projector	2
6. Magnetism.	Interactive lecture with video projector	2
7. Electromagnetism.	Interactive lecture with video projector	2
8. RLC series circuit, parallel RLC Circuit	Interactive lecture with video projector	2
9. Condenser. Condesnatorul cylindrical. Spherical capacitor	Interactive lecture with video projector	2
10. Internal combustion heat engines, 4-stroke - MAS - MAC	Interactive lecture with video projector	2
11. Renewable sources of energy - Biomasa	Interactive lecture with video projector	2

<ul style="list-style-type: none"> - Biogas - Solar energy - Wind energy - Geothermal energy 		
12. Electricity use in the food industry and the electrical equipment used in food industry	Interactive lecture with video projector	2
13. DC electric motors used in the food industry -with the shunt excitation; -with series excitation; -with mixed excitation	Interactive lecture with video projector	2
14. AC electric motors for use in the food industry; -synchronous electric motors; -electric motors	Interactive lecture with video projector	2
8.2. Laboratory		
1. Specific rules for the protection of labour. 2. Gauss's law in dielectrics	Presentation by the didactic Coordinator of the laboratory works of notions related to specific safety Demonstration, food industria analysis, determination and exposure	2
3. Practical application of superposition method and mesh currents method	Demonstration, analysis, and exposure	2
4. Practical application of DC proved Kirchhoff	Demonstration, analysis, and exposure	2
5. Calculation of three-phase power circuits using symmetrical components	Demonstration, analysis, and exposure	2
6. Ohm's law in AC circuits	Demonstration, analysis, and exposure	2
7. Study of the magnetic field produced by the current through a coil	Demonstration, analysis, and exposure	2
8. Study of electromagnetic induction	Demonstration, analysis, and exposure	2
9. Study of resonance in RLC series circuit	Demonstration, analysis, and exposure	2
10. Constructive and functional analysis of the internal combustion heat engines, 4-stroke - MAS - MAC	Demonstration, analysis, and exposure	2
11. Analysis and determinations concerning renewable energy sources -Biomass -Biogas -solar wind -geothermal energy	Demonstration, analysis, and exposure	2
12. Analysis and determination on the use of electrical energy in the food industry	Demonstration, analysis, and exposure	2
13. Constructive and functional analysis of DC electric motors used in the food industry -with the shunt excitation; -with series excitation; -with mixed excitation	Demonstration, analysis, and exposure	2
14.AC electric motors for use in the food industry; - synchronous electric motors; - asynchronous electric motors	Demonstration, analysis, and exposure	2
Bibliography <ol style="list-style-type: none"> 1. Iancu Carmen, Utilaje în industria alimentară, suport curs, Edit. Universității din Oradea, 2011 2. Îndrumar de lucrări practice de laborator, Gheorghe Ailaoie, Galați, 1995 3. Măsurări electrice, vol. I, Metrologie, aparate de măsură analogice, Antoniu M., 		

Editura Gheorge Asachi, Iași, 1995

4. Contorul ALPHA ® Power+ MANUAL TEHNIC - Elster Rometrics, Timișoara, 2003
5. Echipamente electrice – Nicolae Badea, Editura Matrix Rom București, 2008, ISBN 978-973-755-307-2
6. Mașini electrice II, Aurel Câmpeanu, Ion Vlad, Tipografia Universității din Craiova, 2003
7. ELECTROTEHNICĂ, Dumitrescu Mariana, Munteanu Toader - Editura Europlus Galati, 2006, ISBN (10) 973-7845-26-9, ISBN (13) 978-973-7845-26-9
8. Electrotehnică și electronică, Grigore Fetecău, - Editura Academica Galați, 2006, ISBN 973-8316-96-0
9. Măsurări electrice și electronice, Grigore Fetecău, Editura Didactică și Pedagogică, București, 2003, ISBN 973-30-2667-0
10. Mașini și acționări electrice – elemente de execuție, Alexandru Fransua, Răzvan Măgureanu, Editura Tehnică, București, 1986

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

10. Evaluation

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 Laboratory	Test with 5 questions at the end of the laboratory works	Continuous evaluation in the laboratory; knowledge verification laboratory	10% 10%
10.7 Project	-	-	-
10.8 Minimum standard of performance			
<ul style="list-style-type: none"> 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
01.06.2023

Signature of course holder
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Date of approval in the department

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