

## DISCIPLINE SHEET

### 1. Data about program

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

### 2. Data about the disciplines

|                        |    |  |     |                        |    |                          |    |
|------------------------|----|--|-----|------------------------|----|--------------------------|----|
| 2.1 Name of discipline |    | <b>ELECTROTECHNICAL ENGINEERING AND ELECTRONICS APPLIED IN FOOD INDUSTRY</b> |     |                        |    |                          |    |
| 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      | II | 2.5 Semester   | III | 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  | 2          | 3.2 out of which: course | 1  | 3.3 out of which laboratory | 1     |
| 3.4 Total hours in the curriculum   | 28         | 3.5 out of which: course | 14 | 3.6 out of which laboratory | 14    |
| Time allotment  |            |                          |    |                             | hours |
| Study assisted by manual, course support, bibliography and notes                              |            |                          |    |                             | 18    |
| Additional documentation in the library/ on specialised electronic platforms and in the field |            |                          |    |                             | 26    |
| Preparation of seminars/laboratories/ topics/reports, portfolios and essays                   |            |                          |    |                             | 18    |
| Tutorship   |            |                          |    |                             | -     |
| Examinations  |            |                          |    |                             | 4     |
| Additional documentation in the library/ on specialised electronic platforms and in the field |            |                          |    |                             | 6     |
| <b>3.7 Total hours of individual study</b>  | <b>72</b>  |                          |    |                             |       |
| <b>3.9 Total hours per semester</b>   | <b>100</b> |                          |    |                             |       |
| <b>3.10 Number of credits</b>   | <b>4</b>   |                          |    |                             |       |

### 4. Prerequisites (where appropriate)

|                 |                                   |
|-----------------|-----------------------------------|
| 4.1 curriculum  | ELECTROTECHNIC                    |
| 4.2 competences | Knowledge of laboratory equipment |

### 5. Conditions (where appropriate)

|   |  |
|---|--|
| 5.1. related to course                      | <ul style="list-style-type: none"> <li>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.</li> </ul> |
| 5.2. related to seminar/laboratory/ project | <ul style="list-style-type: none"> <li>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,</li> </ul>  |

|  |  |
|--|--|
|  | 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 |  |
|----------------------------------|--|
| <b>Professional competences</b>  | <ul style="list-style-type: none"> <li>• C2 Coordination of activities and processes on the basis of technical specifications</li> <li>• 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</li> <li>• C4 Planning, organizing and coordinating the activities of commercial and marketing in the food's profile</li> </ul> |

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

|                                |  |
|--------------------------------|--|
| <b>7.1 General objective</b>   | <ul style="list-style-type: none"> <li>• Knowledge of the materials used in the construction of machinery and food plants;</li> <li>• 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.</li> </ul>   |
| <b>7.2 Specific objectives</b> | <ul style="list-style-type: none"> <li>• The application of the basic principles and methods for problem solving, well-defined situations typical domain</li> <li>• Laboratory works are so designed as to provide</li> <li>• 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.</li> <li>• 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.</li> </ul> |

### 8. Content \*

| 8.1 Course  | Methods of teaching                      | No. of hours/Remarks |
|---|--|----------------------|
| 1. Linear DC electrical circuits                              | Interactive lecture with video projector | 1                    |
| 2. Triphase electrical circuits                               | Interactive lecture with video projector | 1                    |
| 3. Linear electrical circuits in non-sinusoidal periodic mode | Interactive lecture with video projector | 1                    |
| 4. Linear electrical circuits in transient mode               | Interactive lecture with video projector | 1                    |
| 5. Permanent electrical circuits with controlled sources      | Interactive lecture with video projector | 1                    |
| 6. Cuadripoli and electric filters                            | Interactive lecture with video projector | 1                    |
| 7. Circuit analysis   | Interactive lecture with video projector | 1                    |
| 8. Pulse circuits   | Interactive lecture with video projector | 1                    |

|  |   |   |
|--|---|---|
| 9. Single-phase fixers   | Interactive lecture with video projector  | 1 |
| 10. Triphase straighteners   | Interactive lecture with video projector  | 1 |
| 11. Impedances and noise of amplifiers   | Interactive lecture with video projector  | 1 |
| 12. Electronic tubes. cathode ray tube   | Interactive lecture with video projector  | 1 |
| 13. Negative reaction. The principles of the negative reaction   | Interactive lecture with video projector  | 1 |
| 14. Elements of applied electronic technology  | Interactive lecture with video projector  | 1 |
| <b>8.2. Laboratory</b>   |   |   |
| Specific labour protection rules.  |   |   |
| 1. Practical application of Kirchhoff theorems in DIRECT CURRENT   | Presentation by the didactic Coordinator of the laboratory works of notions related to specific safety Demonstration, food industria analysis, determination and exposure | 1 |
| 2. Calculation of power in three-phase circuits using symmetrical components   | Demonstration, analysis, and exposure   | 1 |
| 3. Analysis and determinations of linear electrical circuits in non-sinusoidal periodic mode   | Demonstration, analysis, and exposure   | 1 |
| 4. Analysis and determinations of linear electrical circuits in transient mode   | Demonstration, analysis, and exposure   | 1 |
| 5. Analysis and determinations of electrical circuits on a permanent basis with controlled sources   | Demonstration, analysis, and exposure   | 1 |
| 6. Analysis of cuadripolies and electrical filters   | Demonstration, analysis, and exposure   | 1 |
| 7. Analysis and checking of circuits   | Demonstration, analysis, and exposure   | 1 |
| 8. Analysis and determinations of pulse circuits   | Demonstration, analysis, and exposure   | 1 |
| 9. Analysis and determinations of single-phase   | Demonstration, analysis, and exposure   | 1 |
| 10. Analysis and determinations of triphaser-rectifiers  | Demonstration, analysis, and exposure   | 1 |
| 11. Analysis and determinations of amplifiers and amplifier noise  | Demonstration, analysis, and exposure   | 1 |
| 12.  |   |   |
| 13. Analysis and determinations of electronic tubes  | Demonstration, analysis, and exposure   | 1 |
| 14. Negative reaction analysis.  | Demonstration, analysis, and exposure   | 1 |
| 15. Analysis of Electronic Technology Elements Applied   | Demonstration, analysis, and exposure   | 1 |
| <p><b>Bibliography</b></p> <ol style="list-style-type: none"> <li>1. Iancu Carmen, Utilaje în industria alimentară, suport curs, Edit. Universității din Oradea, 2011</li> <li>2. Îndrumar de lucrări practice de laborator, Gheorghe Ailoiu, Galați, 1995</li> <li>3. Măsurări electrice, vol. I, Metrologic, aparate de măsură analogice, Antoniu M., Editura Gheorghe Asachi, Iași, 1995</li> <li>4. Contorul ALPHA ® Power+ MANUAL TEHNIC - Elster Rometrics, Timișoara, 2003</li> <li>5. Echipamente electrice – Nicolae Badea, Editura Matrix Rom București, 2008, ISBN 978-973-755-307-2</li> <li>6. Mașini electrice II, Aurel Câmpeanu, Ion Vlad, Tipografia Universității din Craiova, 2003</li> <li>7. ELECTROTEHNICĂ, Dumitrescu Mariana, Munteanu Toader - Editura Europlus Galati, 2006, ISBN (10) 973-7845-26-9, ISBN (13) 978-973-7845-26-9</li> <li>8. Electrotehnică și electronică, Grigore Fetecău, - Editura Academica Galați, 2006,</li> </ol> |   |   |

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%<br>for note 10 – knowledge of material 100% | Summative assessment-<br>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;<br>knowledge verification laboratory | 10%                           |
|  |   |   | 10%                           |
| 10.7 Project   | -   | -   | -                             |
| <b>10.8 Minimum standard of performance</b>  |   |   |                               |
| <ul style="list-style-type: none"><li>• Elaboration of a project or process specific food industry equipment, using concepts, theories and methods in the field</li><li>• The development of a technological project</li><li>• Preparation of a technical study by the efficient use of resources and sources of relevant and current documentation (including internet, databases, online courses).</li></ul> |   |   |                               |

Date of completion  
01.10.2020

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