COURSE SYLLABUS

University	UNIVERSITY OF ORADEA
Faculty	FACULTY OF ENERGY ENGINEERING AND INDUSTRIAL MANAGEMENT
Study program*	KNITTING AND CLOTHING TECHNOLOGY

I. Course Name: ELECTROTECHNICS

II. Course Details

	No of hours/week					
Code	Semester	Credits	Lecture	Seminar	Laboratory	Project
IEMI-0301	1	4	1	1	-	-

III. Course coordinator (title, name, surname, e-mail): Ș.l.dr.ing.Liliana Doble, liadoble@yahoo.com

IV. Course objectives
Familiarization of students with the specific notions of electrical engineering, with the study of elementary notions, laws and fundamental phenomena, the principles that govern the way electric cars work.
Knowledge, understanding of the basic concepts, theories and models of the field and area of specialization; their appropriate use in professional communication

V. Course content	No. of hours
V.1. Lecture (chapters/subchapters and paragraphs)	
1. Electromagnetic sizes. Primitive sizes. Derivative sizes.	2
2. The laws of electrical engineering.	1
3. Unitsystems. electrostatics.	1
4. The magnetic field. Magnetic field in vacuum. Magnetic circuits.	1
5. The laws of the DC circuit. Dc electrical circuits. Electrical circuits in transitory mode. Electrical circuits in permanent sinusoidal mode.	2
6. Cuadripoli	1
7. Circuits in periodic sinusoidal regime .	1
8. Transformers. Pulse transformers.	1
9. DC machines. Cc.Cc.Motors Generators	2
10. AC machines.	1
11. Asynchronous electric cars. Synchronous electric cars	1
V.2. Laboratory/Seminar/Project:	
1. Primitive sizes. Real electrical load. Intensity of the electric field in a vacuum. Magnetic induction in vacuum Magnetic moment. Density of conductive electric current Derived sizes. Electrical load density. Electrical polarization. Magnetization Magnetic Induction. Electrical voltage. Electrical and magnetic flow.	1
2. General Law. Laws of material. Electromagnetic field theorems.	1
3. Electrical potential. The field of a double layer of tasks. The electrical field inconductors. The electric capacitor.	1
4. Magnetic field intensity. Magnetic circuits, laws, theorems, inductions.	1
5. Electrical power. Laws and theorems.	1
6. Linking resistors. Linking voltage sources. Methods of solving electrical grids. The current generator theorems. Circuit elements.	1
7. Characteristic impedances of a cuadripol. Impedance images of the cuadripol. The interconnection of the quadrants.	1
8. Sinusoidal circuit elements. Circuit R,L,C series in nonsinusoidal mode.	1
9. Single-phase transistors . Equations running. Pulse transformers. T.I. calculation method	1
10. DC machines . Nominal sizes. Basic constructive elements. Generator regime, losses and yield.	2

11. AC machines . Bipolar monophase magnetic field. Alternate magnetic field. Multipolar single-phase magnetic field.	2
12. Asynchronous electric machines. Constructive elements. Engine operation. Synchronous electric machines. Constructive elements. Operation under generator mode.	1

VI. Bibliography

1.Ionescu**, D.S – *Circuite electronice*, Editura MatrixRom, Bucureşti, 2008

2.Ionescu**, D.S.; D. Şoproni – *Electrotehnică industrială*, Editura MatrixRom, Bucureşti, 2007

D. Şoproni, T. Maghiar, Ionescu**, D.S. – *Electrotehnică şi maşini electrice*, Editura Universităţii din Oradea, 2005

3.Ionescu**, D.S.; Doble, L.V. – *Aplicaţii în electrotehnica industrială*, Editura Universităţii din Oradea, 2005

4. Radu V. Ciupa- *Bazele electrotehnicii-teorie şi aplicaţii, vol.I,* Casa Cărţii de ştiinţă, 2006   5.E Simion, T. Maghiar- *Electrotehnică* 1981

6. Gh. Mândru- *Bazele electrotehnicii*, UT Pres 2005

7. E. Man, L. Man- *Teoria circuitelor electrice*, UT Pres 2006

8.R. Răduleţ-*Bazele electrotehnicii, Probleme, vol* I Editura didactică şi pedagogică, Buc., 1981

9.D. D. Micu, L. Creţ, D. Duma- *Teoria circuitelor electrice- culegere de probleme*, UT Pres 2005

10..A. Chicinaş, A. Domşa, T.V. Chira– *Electrotehnică-Indrumător de lucrări*, UT Pres 2004

11.R. Micu, R. Creţ- *Materiale electrotehnice*, UT Pres 2002

VII. Grading criteria

Activities	Assesment	% of final grade
Exam	Written exam: 1. Requirements in order to get the minimum grade for passing the exam: to obtain a grade of 5 (five) all subjects are mandatory in the proportion of 50%. 2. Requirements for the maximum grade: For note 10(ten) all subjects are 100 % mandatory.	70%
Seminar/Laboratory/Project	100% presence at the laboratory	30%

VIII. Learning outcomes:

After completing the discipline students will be able to:

-to know the sizes and laws used in electrical engineering

-read, practically carry out the necessary types of schemes.

Identification of the objectives to be achieved, the resources available, the conditions for their completion, the working stages, the working times, the related deadlines for implementation and the related risks.

Accumulation of basic knowledge in the field of electrical engineering. Understanding how different types of machines, machines and appliances specific to the industry work. Ability to process technical data provided by specific equipment. Capacity to make appropriate decisions on the usefulness and applicability of the technical performance of different machines in the field of activity

Course coordinator,
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