

Course Syllabus

Academic year: 2018-2019

Institution	University of Petroșani
Faculty	Mechanical and Electrical Engineering
Field of study	Industrial engineering
Level	Bachelor
Program of study	Machine Building Technology

Course	Electrical engineering and machines
Code	2BB5OD36
Year of study (semester)	III (V)
Number of hours	56
Number of credits	4
Professor	Professor eng.,Ph.D. ARAD Susana

No.	Topic
1.	Electrostatics. State sizes, general and fundamental laws; the energy of the electrostatic field
2.	Electrokinetic. Local sizes, circuit electrical quantities. Theorems and laws. Methods of solving the circuits.
3.	Magneto. State sizes, general and fundamental laws; the magnetostatic field energy
4.	Magnetodinamica. Magnetic circuit sizes, magnetic circuitry calculation. Theorems and laws.
5.	The permanent sinusoidal mode of the electrical circuits. Symbolic representations. Simple electric circuits in sinusoidal alternating current. Serial and parallel stacks. Resonant electric stunts.

6.	Three-phase symmetrical circuits. Connections of three-phase circuits. Three-phase systems with unbalanced voltages. Calculation of three-phase circuits.
7.	Transformer. Study of the single-phase and three-phase transformer. Construction and operation. Features and operating modes
8.	DC electric machines. Construction, types of machines. Operating modes.
9.	Induction machine. The operating principle. Construction. Features and operating modes
10.	Synchronous machine. The operating principle. Construction. Features and operating modes