Course Unit Descriptor

Study Programme: Power, Electronic and Telecommunication Engineering (Power Engineering-Systems)

Course Unit Title: Electric Machines 1

Course Unit Code: EE304

Name of Lecturer(s): Veran Vasić

Type and Level of Studies:Bachelor level

Course Status (compulsory/elective): compulsory

Semester (winter/summer): winter

Language of instruction:english

Mode of course unit delivery (face-to-face/distance learning): face-to-face

Number of ECTS Allocated:5

Prerequisites:none

Course Aims:

Acquiring basic knowledge in the field of electromechanical conversion of energy, electric machines, power electronic devices and electric drives

Learning Outcomes:

- understanding the basic principles of electromechanical conversion of energy -understanding the basic properties and modes of rotary machines

Syllabus:

Rotary electric machines, classification and characteristics. Magnetic excitation forces, flux, inductance, threaded factors, induced electromotive force. Electromagnetic torque. The windings of electric machines. Losses and heating. Transformers (magnetic circuit, windings, operation principle, equivalent circuit, voltage drop, three-phase loop transformers, parallel operation of three-phase transformers, control transformers, auto-transformers).

Required Reading: Relevant literature in English

Weekly Contact Hours:4	**Lectures:2**	**Practical work:2**

Teaching Methods:

The course includes lectures and practice. In the lectures, contemporary illustrations for intuitive understanding of the lectured matter are used. In order to fully master the matter, in the auditory practice students solve problems which follow lectures and enable students to independently solve problems from the engineering practice. Part of the practice is carried out in the laboratory.

Knowledge Assessment (maximum of 100 points):100

Pre-exam obligations	points	**Final exam**	points
Lecture attendance	5	Written part of the exam	30
Exercise attendance	5		
Colloquim exam	20		
Colloquim exam	20		
Test	20		

The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam,

project presentation, seminars, etc.