

Title Electrical Machines	Code 1010311331010320910
Field Power Engineering	Year / Semester 2 / 3
Specialty -	Course core
Hours Lectures: 2 Classes: - Laboratory: 1 Projects / seminars: -	Number of credits 5
	Language polish

Lecturer:

Ph. D., Dr. Habil., Stanisław Rawicki, Professor PP, Ph. D. Jacek Mikołajewicz
tel. +48 61 665 25 95 +48 61 665 23 96
e-mail: stanislaw.rawicki@put.poznan.pl, jacek.mikolajewicz@put.poznan.pl

Faculty:

Faculty of Electrical Engineering
ul. Piotrowo 3A
60-965 Poznań
tel. (061) 665-2539, fax. (061) 665-2548
e-mail: office_deef@put.poznan.pl

Status of the course in the study program:

Obligatory subject, Faculty of Electrical Engineering, Field: Electrical Power Engineering,
Full-time first-degree studies

Assumptions and objectives of the course:

The student should obtain knowledge of theoretical and practical problems connected with principles of operation and basic properties of exploitation of electrical machines used in electrical power engineering.

Contents of the course (course description):

Magnetic circuits of electric devices used in electrical power engineering. Transformers in electrical power engineering: no-load, equivalent circuit, transformer operation at load, three-phase transformers, parallel work, chosen transient states, autotransformers. Induction machines: construction and principle of operation, rotating magnetic field, equivalent circuit, mechanical characteristics, motor starting, speed control. Single-phase induction motors. Induction generator. Synchronous machines in electrical power engineering: construction and principle of operation, phasor diagram, equivalent circuit, no-load, short-circuit of synchronous machine, characteristics for steady-states, co-operation with power network, starting of synchronous motors, damping windings, chosen transient states. Commutator direct current machines: construction and principle of operation, systems of windings connections, commutation, compensating winding, characteristics of generators and motors, speed control of motors.

Introductory courses and the required pre-knowledge:

Basic knowledge of electromagnetism and methods of electric circuits analysis

Courses form and teaching methods:

Lectures supported by computer presentations and transparencies. Laboratory classes

Form and terms of complete the course - requirements and assessment methods:

Tests, examination, reports

Basic Bibliography:

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Additional Bibliography:

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