Code ..... **Course item: .....**

1. INFORMATION ABOUT THE COURSE

A. Basic information

Name of course	*Electrical Machines*
Study level	*First degree*
Unit running the study programme	*Faculty of Telecommunication, Computer Science and Electrical Engineering*
Study programme	*Electrical Engineering*
Speciality	
Name of teacher (s) and his academic degree	*Roman Żarnowski, Phd, Eng*
Introductory courses	*Course of mathematics, physics, electrical engineering on appropriate level*
Prerequisites	*Basic knowledge of EE rules and operation on complex numbers, of DC and AC circuits*

B. Semester/week schedule of classes

Semester	Lectures	Classes	Laboratories	Project	Seminars	Field exercises	ECTS
winter or summer			30				2

2. EFFECTS OF EDUCATION (acc. to National Qualifications Framework)

Knowledge	*On successful completion of the course student is supposed to be able to understand function of electric machine in drive system, to know mechanical engineering and principles of its operation, static characteristics of basic types of electrical machines and understand phenomena proceeded during start-up and rotational speed control and braking.*
Skills	*Results of the learning should be an ability to describe and analyze behavior of electric machine in steady states*
Competences	*On successful completion of the course student is supposed to be conscious of problems occurring in electrical machines*

3. TEACHING METHODS

laboratory

4. METHODS OF EXAMINATION

laboratory - doing all of lab exercises and returning reports

5. SCOPE

Laboratories	*Subject area of laboratory practice includes below listed issues:* *- DC separately excited generator testing,* *- DC separately excited motor testing,* *- 1-phase transformer testing - calculating of equivalent circuit diagram para meters,* - vector group of transformer, *- AC machine preparing to operation,* - magnetic field tests in AC machine, *- determining of AC machine equivalent circuit diagram parameters,* *- parallel running of 3-phase transformers,* - slip-ring induction motor testing, - 1-phase induction motor testing,

	- distinct pole synchronous generator at autonomous operating testing.

6. **LITERATURE**

Basic literature	*Szychta L., Szychta E., Gientkowski Z. 2019: Laboratory of Electrical Machines" Wydawnictwa UTP* *Edwards J. D., 1986. Electrical machines. An introduction to principles and characteristics, Macmillan Publishing Company 2nd Edition.* *Mohan N.,2012. Electric Machines an drives. A first course, Wiley.* *Chapman S. J., 2004. Electric Machinery Fundamentals 4th Edition Bae Systems Australia.* *Bajorek Z., 1992. Teoria maszyn elektrycznych. PWN. .*
Supplementary literature	*Hebenstreit J., Gientkowski Z., 2003: Maszyny elektryczne w zadaniach. Wydawnictwo Uczelniane Akademii Techniczno-Rolniczej w Bydgoszczy.* *Latek W., 1987. Maszyny elektryczne w pytaniach i odpowiedziach. WNT.* *Plamitzer A.M., 1986. Maszyny elektryczne. WNT.*