DESCRIPTION OF THE COURSES

- Course code: ELR3209
- Course title: Industrial Drives
- Language of the lecturer: polish

Course form	***Lecture***	***Classes***	***Laboratory***	***Project***	***Seminar***
*Number of hours/week**	*2*				
*Number of hours/semester**	*30*				
Form of the course completion	*Written test*				
ECTS credits					
Total Student's Workload					

- Level of the course (basic/advanced): basic
- Prerequisites: Power electronics, Electrical drives
- Name, first name and degree of the lecturer/supervisor: Krzysztof Pieńkowski, D.Sc.

- Names, first names and degrees of the team's members:
  Stanisław Azarewicz, Ph.D.
  Adam Zalas, Ph.D.

Year:.....II..... Semester:.....3.....

- Type of the course (obligatory/optional): optional
- Aims of the course (effects of the course):
  Learning of modern industrial driver systems. Knowledge of industrial working machines, its construction and equipment, principles of selection of drive systems and control systems.
- Form of the teaching (traditional/e-learning): traditional
- Course description:
  Classification of industrial machines and technological processes. Electrical drive systems and control of transportation machines. Electrical drive systems and control of machines in mining and steel mills. Electrical drive systems and control of pumps, fans, compressors and centrifuges. Electrical drive systems and control of machines in textile, pulp and paper industry. Electrical drive systems and control of machine tools. Trends in development of industrial drive systems.

- Lecture:

Particular lectures contents	*Number of hours*
1. Classification of industrial machines and technological processes, types and characteristics of working machines	*1*
2. Requirements for industrial drive systems, world and domestic norms and standards	*2*
3. Principles of design and selection of converter fed drive systems	*2*

4. Electrical drive systems and control of cranes and other transportation machines	*2*
5. Electrical drive systems and control of elevators, personal and weight lifts	*2*
6. Electrical drive systems and control of mining hoisting machines	*2*
7. Electrical drive systems and control of belt conveyors and other machines in open mining	*2*
8. Electrical drive systems and control of machines in steel meels	*2*
9. Electrical drive systems and control of pumps, fans and compressors	*2*
10. Electrical drive systems and control of centrifuges	*2*
11. Electrical drive systems and control of machines in textile industry	*2*
12. Electrical drive systems and control of machines in pulp and paper industry	*2*
13. Electrical drives and control systems of machines used in cement plants and processing of raw materials	*2*
14. Electrical drives and control systems of machine tools	*2*
15. Control of automated technological lines	*2*
16.Trends of industrial drive systems	*1*

- Classes – the contents:
- Seminars – the contents:
- Laboratory – the contents:
- Project – the contents:
- Basic literature:

1.Machowski J., Grzbiela C., Dudek W., Machowski A., Maszyny, urządzenia elektryczne i automatyka w górnictwie. Wydawnictwo „Śląsk", Katowice, 1999.
2.Praca zbiorowa, Technika napędu elektrycznego. Zastosowania. WNT, Warszawa, 1970.
3.Urbanowicz H., Napęd elektryczny maszyn roboczych. WNT, Warszawa, 1979.

- Additional literature:

1.Praca zbiorowa, Hutnicze napędy elektryczne. Wydawnictwo „Śląsk", Katowice, 1972.
2.Szklarski L., Zarudzki J., Elektryczne maszyny wyciągowe. PWN, Warszawa, 1998
3. Tunia H., Kaźmierkowski M., Automatyka napędu przekształtnikowego. PWN, Warszawa, 1987.
4.Urbanowicz H., Napęd elektryczny dźwignic. WNT, Warszawa, 1976.
5.Urbański S., Napęd elektryczny maszyn papierniczych. WNT, Warszawa, 1974.

- Conditions of the course acceptance/credition:
  written test

***** - depending on a system of studies