DESCRIPTION OF THE COURSES

- Course code: ARR 2308
- Course title: Static convertors in industry
- 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	*Pass*				
ECTS credits					
Total Student's Workload					

- Level of the course (basic/advanced): advanced
- Prerequisites: Power electronics
- Name, first name and degree of the lecturer/supervisor: Stanisław Szkółka; Ph.D.
- Names, first names and degrees of the team's members: Józef Borecki, Ph.D.; Waldemar Dołęga, Ph.D.
- Year:..... Semester:.....
- Type of the course (obligatory/optional): optional
- Aims of the course (effects of the course):
- Form of the teaching (traditional/e-learning): traditional
- Course description:

Selected applications of converters in the industry. Basic AC and DC regulators. Applications in chemical industry. Static converters for inductive heating. Influence of line-commutated converters on a power network. Uninterruptible power supply systems. Static converters in DC and AC drives. Static converters in the railway industry. Develop tendencys of static converters.

- Lecture:

Particular lectures contents	*Number of hours*
1. Basic AC and DC regulators	*2*
2. Applications for the DC drives	*2*
3. Applications for the AC drives	*2*
4. Uninterruptible power supply systems – structures	*2*
5. Uninterruptible power supply systems – requirements	*2*
6. Applications in chemical industry (i.g. galvanization).	*2*
7. Static convertors for inductive heating.	*2*
8. Soft – Start convertors.	*2*
9. Influence of line commutated convertors on a power network.	*2*
10. Protection equipment due to decreasing the negative influence on the power network.	*2*
11. Active filters for industry applications.	*2*

12. Static conwerters for supply railway traction.	*2*
13. Static conwerters in railway transport	*2*
14. Develop tendencys of the static convertors.	*2*
15. Pass	*2*

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

1. A. M. Trzynadlowski, Introduction to modern power electronics; 1998
2. Alain Charoy „ Compatibilité électromagnétique – Parasites et perturbations des électroniques" Dunod, Paris 1992.
3. P. Büchner "Stromrichter-Netzrückwirkungen und ihre Beherschung"Auflage VEB Deutscher Verlag für Grudstoffindustrie, Leipzig 1982.
4. B.M. Bird & K.G. King „An Introduction to Power Electronics" 1983 by J. Willey & Sons Ltd

- Additional literature:

1. Jayant Baliga, power semiconductor devices; 1996
2. Laszlo Tihanyi, electromagnetic compatibility in power electronics, 1995
3. Daniel W. Hart, Introduction to power electronics; 1997
Thomas h. Barton, Rectifiers, cycloconverters, and ac controllers; 1994

- Conditions of the course acceptance/credition:

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