

## DESCRIPTION OF THE COURSES

- Course code: ELR2576
- Course title: ELECTRIC POWER SYSTEMS 2
- Language of the lecturer: english, polish

| <i>Course form</i>                   | <i>Lecture</i> | <i>Classes</i> | <i>Laboratory</i>       | <i>Project</i> | <i>Seminar</i> |
|--------------------------------------|----------------|----------------|-------------------------|----------------|----------------|
| <i>Number of hours/week*</i>         |                |                | 2                       |                |                |
| <i>Number of hours/semester*</i>     |                |                | 20                      |                |                |
| <i>Form of the course completion</i> |                |                | <i>exercise reports</i> |                |                |
| <i>ECTS credits</i>                  |                |                | 2                       |                |                |
| <i>Total Student's Workload</i>      |                |                | 60                      |                |                |

- Level of the course (basic/advanced): basic
- Prerequisites: Mathematics, Physics, Electric Circuit Theory, Informatics in Electrical Engineering, Electric Power System 1
- Name, first name and degree of the lecturer/supervisor: Prof. Marian Sobierajski, Ph.D., D.Sc. Associate Professor
- Names, first names and degrees of the team's members: Prof. Artur Wilczynski, Ph.D., D.Sc., Associate Professor, Robert Lis, Ph.D, Robert Łukomski, PhD
- Year:.....4..... Semester:.....7.....
- Type of the course (obligatory/optional): obligatory
- Aims of the course (effects of the course): Skill of the analysis of modern power systems.
- Form of the teaching (traditional/e-learning): traditional
- Course description: Load flow calculation in radial and meshed network. Balanced and unbalanced short-circuit analysis in power systems.electricity supply. Voltage regulation in power systems.
- Lecture:

| <i>Particular lectures contents</i> | <i>Number of hours</i> |
|-------------------------------------|------------------------|
|                                     |                        |

- Classes – the contents:
- Seminars – the contents:
- Laboratory – the contents:
  1. Load flow analysis in radial power systems.
  2. Load flow calculations in meshed power systems.
  3. IEC method of short-circuit analysis.
  4. Computer analysis of limiting short circuit currents.
  5. Computer analysis of short-circuit with ground in medium voltage network.
- Project – the contents:

- Basic literature:
  1. Machowski J., Bialek J. W., Bumby J. R., Power System Dynamics and Stability. John Wiley and Sons 1997.
  2. Sobierajski M., Łabuzek M., Lis R., Electric Power System Analysis in Matlab, Wrocław University of Technology, 2007.
  3. Kremens Z., Sobierajski M., Electric Power Analysis. WNT 1996 /in polish/
- Additional literature: An academic book on Electrical Power System Analysis.
- Conditions of the course acceptance/creditation:

Positive note of exercise reports.

\* - depending on a system of studies