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Lectures:

- evaluation of the knowledge and skills demonstrated in written tests concerning issues presented,
- evaluation of the activity and quality of perception.

Classes:

- results of test favoring the utilization of the acquired knowledge to solve problems in the area of the subject.

Course description

Fuel resources and modern energy generation and transmission technologies. The costs of generating electricity and heat, taking into account the impact on the environment (CO2, SO2). EU sustainable energy policy to reduce emissions, promote renewable energy and energy efficiency. Diversification of energy sources including different generation technologies. Regulations on the energy markets. Risks for security of energy supply characteristic for different energy sources and the methods for the evaluation and limitation of their values. Power system failures as a feature of large complex systems. The basic principles for the defence and reconstruction of energy supply from power systems during states of emergency and disaster. Methods for granting the local security of energy supply by stand by power resources. Subject of classroom exercises consistent with the lectures.

Basic bibliography:

1. M. Kaczmarski, Bezpieczeństwo energetyczne Unii Europejskiej. Wydawnictwo Akademickie i Pro-fesjonalne. 2010.

2. G.Bartodziej, M.Tomaszewski, Polityka energetyczna i bezpieczeństwo energetyczne, Wydawnictwo Federacji Stowarzyszeń Naukowo-Technicznych Energetyka i Środowisko, Warszawa, 2009

3. Jednolity rynek energii elektrycznej w Unii Europejskiej w kontekście bezpieczeństwa energetycznego Polski. Agnieszka Pach-Gurgul, Difin 2012, ISBN: 978-83-7641-717-2

Additional bibliography:

1. Praca zbiorowa: Safety of the Polish Power System. Defence and Restoration Plans, Electrical Engineering Issue 57, Published by Poznan University of Technology, Poznań, 2008.

2. J.Machowski: Regulacja i stabilność systemu elektroenergetycznego, Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa 2007.

3. J. Paska : Ekonomika w elektroenergetyce, Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa 2007.

Result of average student's workload

| Activity | | Time (working hours) | | |
|---|-------|----------------------|--|--|
| 1. Participation in courses and classrooms | | 30 | | |
| 2. Preparation for examination | | 33 | | |
| 3. Consultations concerning lectures and classrooms | 3 | | | |
| Student's workload | | | | |
| Source of workload | hours | ECTS | | |
| Total workload | 66 | 2 | | |
| Contact hours | 33 | 1 | | |
| Practical activities | 0 | 0 | | |