



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Strategy for sustainable energy development and legal regulations [N1Energ2>SZRiRP]

### Course

Field of study

Power Engineering

Year/Semester

4/8

Area of study (specialization)

–

Profile of study

general academic

Level of study

first-cycle

Course offered in

Polish

Form of study

part-time

Requirements

elective

### Number of hours

Lecture

10

Laboratory classes

10

Other

0

Tutorials

0

Projects/seminars

0

### Number of credit points

2,00

### Coordinators

dr inż. Radosław Szczerbowski

radoslaw.szczerbowski@put.poznan.pl

### Lecturers

### Prerequisites

Basic information on energy and fuel, technology and power machinery. Basic knowledge in economics. The ability to use information from literature and databases. The ability to use economic knowledge and the basics of law in practice. He is aware of the need to broaden his / her competences, ability to work in a team

### Course objective

To familiarize students with the general principles and conditions of sustainable energy development - in its technical, economic and legal aspects. Ability to assess the energetic situation of the World and Poland. Combining knowledge of energy and energy law.

### Course-related learning outcomes

Knowledge:

1. Has basic and structured knowledge in the field of energy security and the role of fuels and generation sources in the energy system
2. Has knowledge about the role and importance of energy in the economy of the country, the size of energy resources and the ways of their use, taking into account the production structure of the energy

system. He learns the characteristics of various energy sectors: the power system and heating.  
3. Knows the structure of the national energy system and subsystems, knows the principles of rational energy management in the processes of conversion and energy use.

Skills:

1. The student is able to estimate the energy demand
2. Has the ability to solve practical problems in energy systems including legal, economic and environmental aspects

Social competences:

Is aware of the responsibility for jointly implemented tasks

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lecture:

- assessment of knowledge and skills demonstrated during a written colloquium of a problem or test nature,
- continuous assessment during each class (rewarding activity and quality of perception).

Laboratory:

- rewarding systematic progress in project work,
- as part of the assessment, making a presentation on a topic selected by the lecturer,
- presentation at the forum, assessment of the form and content of the completed project

### Programme content

Sustainability strategy - definition and role of sustainability in the energy industry. Impact of environmental, social responsibility and corporate governance (ESG Environmental, Social, Corporate Governance) issues on the activities of energy companies. Assumptions of Polish and European energy policy. The concept and scope of the Energy Law. Energy policy of Poland and the European Union. Closed Circuit Economy in the energy sector.

### Course topics

Lecture

Assumptions of the European energy policy. Energy Roadmap of the European Union until 2050. The Fit for 55 European Green Deal package. EU energy policy - the context of transition, analysis of key documents setting the directions of changes in energy policy. Poland's Energy Policy - analysis of strategic documents relating to the country's energy policy. Objectives and content of the current PEP. Concept and scope of the Energy Law. Energy policy of the European Union. Analysis of assumptions and legal basis. Content of the current EU EP. EU energy policy - the context of transformation, analysis of key documents setting the directions of changes in energy policy. EU directives and their implementation in Polish legislation. Planning the development of sustainable energy systems at different scales. Definition of a closed loop economy. GOZ in the energy sector. Sustainable development strategy - definition and role in the energy sector. Impact of environmental, social responsibility and corporate governance (ESG) issues on the activities of energy companies.

Laboratory:

solving a problem task of a project nature on selected topics related to the lecture min:

- the impact of EU regulations on Poland's energy policy
- evaluation of changes in Poland's energy mix in the context of sustainable development strategies
- sustainable development strategies of energy companies
- closed-loop economy in the energy sector

### Teaching methods

Lecture:

Lecture with multimedia presentation

Laboratory:

work in groups, performing project tasks, developing problematic issues: literature review, analysis of statistical data regarding the subject matter, calculations, formulating hypotheses, discussion,

## Bibliography

### Basic:

1. Góralczyk I., Tytko R., Racjonalna gospodarka energią, Wydawnictwo: Towarzystwo Słowaków w Polsce, 2013
2. Charun H., Podstawy gospodarki energetycznej w zarysie t 1-3. Wydawnictwo Uczelniane Politechniki Koszalińskiej. 2016
3. Niedziółka D., Rynek energii w Polsce, Difin, 2010
4. Soliński I., Ekonomia i organizacja sektorów systemu paliwowo-energetycznego. Uczelniane Wydawnictwa Naukowo-Dydaktyczne. 2000
5. Krajowa Agencja Poszanowania Energii, Efektywność energetyczna i odnawialne źródła energii w gminie, Krajowa Agencja Poszanowania Energii, 2004.
6. Wysocki R., Prawo energetyczne i wybrane przepisy energoefektywne, Polcen, 2014
7. Bogda A., Zasoby naturalne i zrównoważony rozwój, Wydawnictwo Uniwersytetu Przyrodniczego, cop. 2010.
8. Mikosz R., Lipiński A., Radecki G., Dobrowolski G., Zrównoważony rozwój jako czynnik determinujący prawne podstawy zarządzania geologicznymi zasobami środowiska, Agencja Reklamowa Top, 2016.
9. Ustawa z dnia 10 kwietnia 1997 r. PRAWO ENERGETYCZNE
10. Polityka Energetyczna Polski
11. Dyrektywy UE dotyczące sektora energetyczneg

### Additional:

1. Szargut J., Ziebiak A., Podstawy energetyki cieplnej, PWN
2. Kuciński K., Energia w czasach kryzysu, DIFIN, 2006
3. Szargut J., Ziebiak A., Podstawy energetyki cieplnej, PWN
4. Kwiatkiewicz P., Szczerbowski R. (red. Nauk.), Bezpieczeństwo, edukacja, gospodarka, ochrona środowiska, polityka, prawo, technologie, Fundacja na Rzecz Czystej Energii, 2014.
5. Banaś M., Ochrona i inżynieria środowiska : zrównoważony rozwój, Wydział Inżynierii Mechanicznej i Robotyki AGH, 2008.
6. Szczerbowski R.,. Strategia zrównoważonego rozwoju a sektor wytwarzania energii w Polsce, Energetyka - 2018, nr 7
7. Janusz P., Szczerbowski R., Zaleski P, Istotne aspekty bezpieczeństwa energetycznego Polski, Warszawa, Polska : Texter, 2017
8. Kulczycka J., Gospodarka o obiegu zamkniętym w polityce i badaniach naukowych, Wydawnictwo IGSMiE PAN, Kraków 2019

## Breakdown of average student's workload

|                                                                                                                                         | Hours | ECTS |
|-----------------------------------------------------------------------------------------------------------------------------------------|-------|------|
| Total workload                                                                                                                          | 50    | 2,00 |
| Classes requiring direct contact with the teacher                                                                                       | 20    | 1,00 |
| Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation) | 30    | 1,00 |