

POLITECHNIKA KRAKOWSKA IM. TADEUSZA KOŚCIUSZKI

KARTA PRZEDMIOTU

obowiązuje studentów rozpoczynających studia w roku akademickim 2015/2016

Wydział Inżynierii i Technologii Chemicznej

Kierunek studiów: Inżynieria Chemiczna i Procesowa

Profil: Ogólnoakademicki

Forma studiów: stacjonarne

Kod kierunku: I

Stopień studiów: II

Specjalności: Engineering of Technological Processes (IPT, IPB, IOZE)

1 INFORMACJE O PRZEDMIOCIE

NAZWA PRZEDMIOTU	SIa-2_Environmental Impacts of Selected Renewable Energy Technologies
NAZWA PRZEDMIOTU W JĘZYKU ANGIELSKIM	Environmental Impacts of Selected Renewable Energy Technologies
KOD PRZEDMIOTU	WITCh ICHIP oIIS B1 15/16
KATEGORIA PRZEDMIOTU	Przedmioty podstawowe
LICZBA PUNKTÓW ECTS	3.00
SEMESTRY	3

2 RODZAJ ZAJĘĆ, LICZBA GODZIN W PLANIE STUDIÓW

SEMESTR	WYKŁADY	ĆWICZENIA	LABORATORIUM	LABORATORIUM KOMPUTERO- WE	PROJEKT	SEMINARIUM
3	0	0	0	0	0	30

3 CELE PRZEDMIOTU

Cel 1 To show and inform students of the potential environmental impact of renewable energy sources excluding nuclear power

Cel 2 To discuss the potential long-term environmental effects of the transition from traditional energy sources to renewable ones.

4 WYMAGANIA WSTĘPNE W ZAKRESIE WIEDZY, UMIEJĘTNOŚCI I INNYCH KOMPETENCJI

- 1 Students are expected to have a good knowledge of physics and chemistry, as well as fundamental understanding of renewable energy resources. Basic computer and PDA skills are essential.

5 EFEKTY KSZTAŁCENIA

EK1 Wiedza List and describe primary renewable energy resources (of heat, cold or electric power) and technologies for households, code (T2A_W02) as well as the renewable energy resources influence on the environment code (T2A_W05).

EK2 Wiedza Discuss potential advantages and disadvantages of a wide usage of alternative energy resources and environmental issues associated with them. Code(T2A_W02.)Describe/illustrate long time effects of traditional energy vs renewable sources usage with special focus on their environmental impacts(T2A_U19)

EK3 Wiedza Describe/illustrate the long time effects of traditional energy vs renewable sources usage with a special focus on their environmental impact(T2A_U19)

EK4 Kompetencje społeczne A discussion on whether "Renewable energy has the potential to reduce pollution, slow global warming, create new industries and jobs, and move the World toward a cleaner, healthier energy future"

6 TREŚCI PROGRAMOWE

SEMINARIUM		
LP	TEMATYKA ZAJĘĆ OPIS SZCZEGÓŁOWY BLOKÓW TEMATYCZNYCH	LICZBA GODZIN
S1	An introduction to renewable energy resources, such as solar, wind power and geothermal and biomass, with a scientific study of the energy fields and an emphasis on their impact on environment. A renewable energy Glossary.	5
S2	An Introduction to Energy of the Sun. Thermal and electric power energy gaining potential. Material used for thermal solar panels and PV panels. The threats to the environment materials and installation used.	5
S3	An introduction to energy potential of wind. Wind generators theory and practice. The Environmental impact of wind generators.	5
S4	Introduction to the energy which can be harnessed from Biomass. Biomass sources typology. The Environmental issues of Biomass usage.	5
S5	Environmental Impacts of Geothermal Energy. Heat Pumps theory and practice. The Efficiency and environmental issues of related to Heat Pumps installation in real time conditions.	5
S6	Impacts of of Hydroelectric Power and Hydrokinetic Energy. A Discussion of the environmental issues in real time renewable energy plant conditions. Possible visit to one of the plants near Cracow.	5

7 NARZĘDZIA DYDAKTYCZNE

N1 Dyskusja

N2 Prezentacje multimedialne

N3 Konsultacje

N4 Inne

8 OBCIĄŻENIE PRACĄ STUDENTA

FORMA AKTYWNOŚCI	ŚREDNIA LICZBA GODZIN NA ZREALIZOWANIE AKTYWNOŚCI
Godziny kontaktowe z nauczycielem akademickim, w tym:	
Godziny wynikające z planu studiów	30
Konsultacje przedmiotowe	3
Egzaminy i zaliczenia w sesji	1
Godziny bez udziału nauczyciela akademickiego wynikające z nakładu pracy studenta, w tym:	
Przygotowanie się do zajęć, w tym studiowanie zalecanej literatury	30
Opracowanie wyników	5
Przygotowanie raportu, projektu, prezentacji, dyskusji	5
SUMARYCZNA LICZBA GODZIN DLA PRZEDMIOTU WYNIKAJĄCA Z CAŁEGO NAKŁADU PRACY STUDENTA	74
SUMARYCZNA LICZBA PUNKTÓW ECTS DLA PRZEDMIOTU	3.00

9 SPOSOBY OCENY

An active participation and discussions plus some short oral and written presentations will be expected and assessed

OCENA FORMUJĄCA

F1 Odpowiedź ustna

F2 Projekt zespołowy

OCENA PODSUMOWUJĄCA

P1 Zaliczenie ustne

OCENA AKTYWNOŚCI BEZ UDZIAŁU NAUCZYCIELA

B1 Projekt zespołowy

B2 Inne

KRYTERIA OCENY

EFEKT KSZTAŁCENIA 1	
NA OCENĘ 3.0	Passive participation in classes and absence in discussion.
NA OCENĘ 3.5	An active participation and discussions. Poor knowledge of the subject.
NA OCENĘ 4.0	An active participation and discussions, some short oral presentatnions. Good knowledge of the subject.
NA OCENĘ 4.5	An active participation and discussions, some short oral presentatnions. Very good knowledge of the subject.
NA OCENĘ 5.0	An active participation and discussions plus some short oral and written presentations. Excellent knowledge of the subject.
EFEKT KSZTAŁCENIA 2	
NA OCENĘ 3.0	Passive presnece in classes and lack of participation in discussion,no presentations deliverered
NA OCENĘ 3.5	An active participation and discussions. Poor knowledge of the subject.
NA OCENĘ 4.0	An active participation and discussions plus some short oral presentatnions. Good knowledge of the subject.
NA OCENĘ 4.5	An active participation and discussions plus some short oral presentatnions. Very good knowledge of the subject.
NA OCENĘ 5.0	An active participation and discussions plus some short oral and written presentations. Excellent knowledge of the subject.
EFEKT KSZTAŁCENIA 3	
NA OCENĘ 3.0	Student attended part of the classes.The final paper barely attempts the task. The general idea may be conveyed, but there will be a definite lack of understanding of the overall knowledge of the course.
NA OCENĘ 3.5	Student attended only part of the classes.The finall paper may demonstrate an incomplete or inadequate knowledge of the skills assessed. Significant flaws may be evident as the author fails to address the prompt in an appropriate manner, ideas may be conveyed in a random method, and very little is given in proof, details, facts, examples or descriptions.
NA OCENĘ 4.0	Student attended more than 50% of the classes. The final paper is delivered on time. It may be missing some details and/or examples, and offer incomplete descriptions and fewer insights into the characters and/or topics. The author may not sufficiently close the piece of writing and may leave the reader hanging or may offer the reader an inappropriate closing or ending.

NA OCENĘ 4.5	Student attended most of the classes. The final paper delivered on time, is written in an appropriate style and format. It may be missing some details and/or examples, and offer incomplete descriptions and fewer insights into the characters and/or topics. The author may not sufficiently close the piece of writing and may leave the reader hanging or may offer the reader an inappropriate closing or ending.
NA OCENĘ 5.0	Student attended most of the classes. The final paper, delivered on time, is written in a style appropriate to the genre being assessed. It is well organised, clearly written, concise and meets the needs of the author and tutor. It will contain sufficient details, examples, descriptions and insights to present the author's point of view. The author will bring closure through a resolution of a problem or a summary of the topic.
EFEKT KSZTAŁCENIA 4	
NA OCENĘ 3.0	Student failed to deliver the paper and showed no interest in ongoing discussion but was present at nearly all classes.
NA OCENĘ 3.5	Student took part in discussion but delivered no acceptable paper. Attempted nearly all classes
NA OCENĘ 4.0	C good Student showed active participation in discussions but delivered neither oral nor written presentation. Attempted nearly all classes
NA OCENĘ 4.5	B very good Student showed active participation in discussions and delivered at least one oral or written presentation. Attempted all classes
NA OCENĘ 5.0	A - excellent Student showed active participation in discussions and delivered some short oral and written presentations. Attempted all classes

10 MACIERZ REALIZACJI PRZEDMIOTU

EFEKT KSZTAŁCENIA	ODNIESIENIE DANEGO EFEKTU DO SZCZEGÓŁOWYCH EFEKTÓW ZDEFINIOWANYCH DLA PROGRAMU	CELE PRZEDMIOTU	TREŚCI PROGRAMOWE	NARZĘDZIA DYDAKTYCZNE	SPOSOBY OCENY
EK1		Cel 2	S1 S2 S3 S4 S5 S6	N1 N2 N3	F1
EK2		Cel 2	S1 S2 S3 S4 S5 S6	N1 N2 N3	F1
EK3		Cel 2	S1 S2 S3 S4 S5 S6	N1 N2 N3	F1
EK4		Cel 2	S1 S2 S3 S5 S6	N1 N3	P1

11 WYKAZ LITERATURY

LITERATURA PODSTAWOWA

- [1] Boyle, Godfrey — *Renewable Energy (2nd edition)*,, Oxford, 2004, Oxford University Press
- [2] Boyle, Godfrey, Bob Everett, and Janet Ramage (eds.) — *Energy Systems and Sustainability: Power for a Sustainable Future*,, Oxford, 2004, Oxford University Press

12 INFORMACJE O NAUCZYCIELACH AKADEMICKICH

OSOBA ODPOWIEDZIALNA ZA KARTĘ

dr inż. Jacek Biskupski (kontakt: jacek.biskupski181@gmail.com)

OSOBY PROWADZĄCE PRZEDMIOT

1 Dr inż. Jacek Biskupski (kontakt: jacek.biskupski181@gmail.com)

13 ZATWIERDZENIE KARTY PRZEDMIOTU DO REALIZACJI

(miejscowość, data)

(odpowiedzialny za przedmiot)

(dziekan)

PRZYJMUJĘ DO REALIZACJI (data i podpisy osób prowadzących przedmiot)

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