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Prof. dr hab. inż. Stanisław Cudziło

Nazwa przedmiotu: **Prezentacja zagadnień naukowo-technicznych**
Nazwa w jęz. angielskim: **Presentation of scientific and technical subjects**
Kod przedmiotu: WTCCXCSM-PZN-T, WTCCXCSM-PZN-T2,
WTCCOWSM-PZN-T, WTCCOWSM-PZN-T2

Dane dotyczące przedmiotu:
Jednostka oferująca przedmiot: Wydział Nowych Technologii i Chemii
Przedmiot dla jednostki: Wydział Nowych Technologii i Chemii
Obowiązuje od naboru marzec 2016

Domyślny typ protokołu dla przedmiotu:

Zaliczenie na ocenę

Język wykładowy:

angielski

Skrócony opis:

SEM II:
Terminology of mathematics.
Terminology of general physics
Rudiments of general, inorganic and physical chemistry

SEM.III:
Nomenclature of organic compounds
Materials engineering terminology
Conference presentations. Papers.
Oral presentations supported by multimedia

Opis:

SEMESTR II

1. Essence and goal of the subject. Survey of the rudiments of English grammar important from the subject's point of view.
2. Structure and organization of a university. Evaluation of students' knowledge. Types of studies and university activities. University degrees. Academic miscellany.
3. English vocabulary in mathematics. Cardinal and ordinal numbers. Fundamental mathematical operations. Addition, subtraction, multiplication, division of numbers and algebraic expressions. Sum, difference, product and ratio of mathematical quantities.
4. Notion of a function. Types of functions. Scalars and vectors. Vector calculus. Dot and vector product. Fundamentals of geometry. Trigonometric functions. Differential and integral calculus. Notions of a differential and an integral. Probability calculus and mathematical statistics.
5. Structure of physical sciences. Scalar and vector physical quantities. The SI units. Description of physical phenomena in English. Formulation of fundamental physical laws and principles.
6. Methodology of presentation of scientific issues in written and spoken English. Guides for preparation of a computer presentation. Reading and analysis of chosen popularized scientific papers on mathematics and physics.
7. Fundamental English vocabulary applied in chemistry. Structure of the science. Reading the names of chemical elements and basic chemical reactions.
8. General chemistry. Fundamentals of quantum mechanics. Notions of energy shells and sub-shells. Structure of an atom. Periodic table of elements. Molecules. Chemical bonds. Chemical reactions. Chemical affinity. Solutions.
9. Basics of inorganic chemistry. Physical chemistry. Conservation principles in chemistry. Nomenclature of chemical inorganic compounds. Lab work description. Vocabulary of technological chemistry. Lab instruments and utensils.
10. Nomenclature of organic compounds. Reading and analysis of chosen popularized scientific papers on organic chemistry.
11. Characteristics of a substance. Macroscopic properties of matter. Physical methods for research of macroscopic properties of matter. Instrumental methods in chemistry.
12. Examples of written and spoken description of scientific and technological topics. Written presentations of chosen physical and chemical phenomena.
13. Analysis of popularized scientific texts oriented towards understanding of English applied in chemistry and chemical technology. Oral presentations of some chosen topics on chemistry.

SEMESTR III

14. Physical chemistry. Spectroscopy. Thermodynamics. Gas laws. Electrochemistry. Chemical kinetics. Processes on the surface of solids. Macromolecules. Polymers. Structure of matter. X-ray structural analysis. Electric and magnetic properties of matter. Energy band theory of matter. Lasers. Technological and scientific applications of laser light.
15. Measurement techniques. Description of technological properties of some measuring devices, especially the characteristics of electronic measurement instruments. Discussion of the measurements' exactness. Error calculus. Standard deviations and other ways of estimation of accuracy of measurements.
16. Preparation of a paper on measurements' results of a chosen physicochemical quantity realized in the laboratory of general physics, MUT. Description of the measurement set-up.
17. Presentation of a laboratory set-up for measurements of a chosen quantity related to chemistry or materials science. Characteristics of the structural components of the arrangement and the principle of its operation.
18. Basic English nomenclature within the range of instrumental analysis, as well as in electronics, information technology and optoelectronics.
19. Modern technologies. Directions of technological development. Nanotechnology.
20. Methodology of presentation of research results in the form of a paper and a poster. Components of a paper.
21. Oral presentations concerning description of some chosen problems of chemistry.
22. Conference English. Typical expressions. Examples of conference appearances.
23. Groundwork for a conference poster presentation.
24. Groundwork for a conference oral appearance.
25. Individual presentations of a prepared oral appearance designed for a scientific conference.

Literatura:

Podstawowa:

1. P. Domański, English in Science and Technology, WNT, 1993.
2. L. Szkutnik, An Introductory Course in Scientific English, PWN, 1978.
3. R. Macpherson, University English, Wydawnictwa Szkolne i Pedagogiczne, 1994.
4. E. B. Uvarov, A. Isaacs, Dictionary of Science, The Penguin, 1993.
5. David. W. A. Sharp, The Penguin Dictionary of Chemistry, 1991.

Uzupełniająca:

1. P. Atkins & J. de Paula, Physical Chemistry, Oxford University Press, 2005.

Efekty kształcenia:

Numer	Opis	Odniesienie do efektów kierunkowych
W1	Presents knowledge within the range of scientific and technological problems	K_W02
W2	Has the indispensable knowledge to formulate a detailed description of basic chemical, physical and physicochemical phenomena	K_W02
W3	Knows the general chemical, mathematical and physical terminology necessary to translate papers on scientific and technological issues	K_W02, K_W017
U1	Is able to formulate problems in English within the range of exact sciences	K_U01
U2	Has the ability to present scientific and technological issues both in written and oral way as well as to describe results of scientific research	K_U15
U3	Is able to make use of electronic and printed sources of scientific information	K_U10
U4	Is able to present scientific and technological issues in the form of publications, lectures and conference appearances	K_U15
K1	Properly recognizes and solves problems related to his/her profession	K_K05

Metody i kryteria oceniania:

- The subject is credited under condition of the positive results of one oral and written tests and a computer presentation in each semester.
- Effects W 1-3 , U 1-4 and K-1 will be checked in both oral and written way.

Praktyki zawodowe:

brak

Forma studiów

stacjonarne

Rodzaj studiów

II stopnia

Rodzaj przedmiotu							
obowiązkowy							
Przedmioty wprowadzające							
• general physics and mathematics at basic level of a technical university • English within the range of secondary comprehensive school							
Programy							
kierunek: Chemia							
specjalność: wszystkie specjalności							
Forma zajęć liczba godzin/rygor							
semestr	x- egzamin, + zaliczenie, # projekt						ECTS
	razem	wykłady	ćwiczenia	laboratoria	projekt	seminarium	
II	30		30 / +				1
III	30		30 / +				1
Autor							
dr inż. Wiesław Borys							
Bilans ECTS							
Lp.	Aktywność						Obciążenie w godz.
1	Udział w wykładach						
2	Samodzielne studiowanie tematyki wykładów						
3	Udział w ćwiczeniach						60
4	Samodzielne przygotowanie się do ćwiczeń						10
5	Udział w laboratoriach						
6	Samodzielne przygotowanie się do laboratoriów						
7	Udział w seminariach						
8	Samodzielne przygotowanie się do seminariów						
9	Realizacja projektu						
10	Udział w konsultacjach						
11	Przygotowanie do egzaminu						
12	Udział w egzaminie						
						Godz.	ECTS
Sumaryczne obciążenie pracą studenta						70	2
Zajęcia z udziałem nauczycieli: 1+3+5+7+9+10+12						60	1,5
Zajęcia o charakterze praktycznym: 5+6+9							
Zajęcia powiązane z działalnością naukową: 1+2+3+4+7+8						70	2

AUTOR
KARTY INFORMACYJNEJ

doc dr inż. Wiesław BORYS

KIEROWNIK JEDNOSTKI ORGANIZACYJNEJ
ODPOWIEDZIALNEJ ZA PRZEDMIOT

prof. dr hab. inż. Leszek JAROSZEWICZ