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prof. dr hab. inż. Stanisław Cudziło

Nazwa przedmiotu:

Presentation of scientific and technical subjects

English name:

Presentation of Scientific and technical subjects

Code of the subject:

WTCNTCSM-PoSaTS; WTCNTCSM-PoSaTS2

Data concerning the subject:

Faculty of Advanced Technologies and Chemistry

Faculty of Advanced Technologies and Chemistry

October 2016

Unit offering the subject:

Subject is addressed to:

Is valid from:

The default protocol type for the course:

The subject is credited with a mark

Language of lecture:

English

Short description:

SEM I

1. Terminology of mathematics.
2. Terminology of general physics
3. Rudiments of general and inorganic chemistry

SEM II

1. Rudiments of materials engineering
2. Construction and functional materials
3. Measurement techniques applied in materials engineering
4. Groundwork for computer presentation of scientific problems
5. Conference presentations. Papers.

Full description:

Sem. I:

1. Essence and goal of the subject / 1
2. English nomenclature 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. / 3
3. 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. / 1
4. 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. / 2
5. 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. / 4
6. Fundamental English vocabulary applied in chemistry. Structure of the science. Reading the names of chemical elements and basic chemical reactions. / 2
7. 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. / 2
8. 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. / 2
9. Nomenclature of organic compounds. Reading and analysis of chosen popularized scientific papers on organic chemistry. / 4
10. Characteristics of a substance. Macroscopic properties of matter. Physical methods for research of macroscopic properties of matter. Instrumental methods in chemistry. / 2
11. Examples of written and spoken description of scientific and technological topics. Written presentations of chosen physical and chemical phenomena. / 2
12. Analysis of popularized scientific texts oriented towards understanding of English applied in chemistry and chemical technology. Oral presentations of some chosen topics on chemistry. / 5

Total: 30 h

Sem. II:

1. Methodology of presentation of the measurements' results in the form of a paper. Components of a paper. Visual presentation of data. / 2

2. Preparation of a paper of the measurements' results of a given physical quantity realized in the laboratory of general physics, MUT. Discussion of the measurements' exactness. Error calculus. Standard deviations and other ways of estimation of measurements. / 4
3. Speech on the laboratory set-up for measurements of a chosen quantity related to materials engineering. Characteristics of the structural components and the principles of their operation. / 2
4. English in electronics, information technology, optoelectronics and telecommunications. / 4
5. Modern technologies. Directions of technological development. Nanotechnology.
6. Preparation of a computer presentation on materials engineering. / 2
7. Oral presentations concerning description of some manufacturing processes in materials engineering. / 4
8. Conference English. Typical expressions. Examples of conference appearances. / 2
9. Groundwork for a conference poster presentation. / 2
10. Groundwork for a conference oral appearance. / 2
11. Individual presentations of a prepared oral appearance designed for a scientific conference. / 6

Total: 30 h

Bibliography:

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.

Effects of teaching:

- | | | |
|----|--|-------------------|
| W1 | Presents knowledge within the range of scientific and technological problems | K_W02-4, K_W08-9 |
| W2 | Has the indispensable knowledge to formulate a detailed description of basic chemical, physical and physicochemical phenomena | K-W03-4, K-W12-16 |
| W3 | Knows the general chemical mathematical and physical terminology necessary to translate papers on scientific and technological issues | K-W08-12 |
| U1 | Is able to formulate problems in English within the range of exact sciences | K-U01, KU-05 |
| U2 | Has the ability to present scientific and technological issues both in written and oral way as well as to describe results of scientific re-search | K-U03, K-U05 |
| U3 | Is able to make use of electronic and printed sources of scientific information | K-U04-5 |
| U4 | Is able to present scientific and technological issues in the form of publications, lectures and conference appearances | K-U05-7 |
| K1 | Properly recognizes and solves problems related to his/her profession | K-K05-7 |

Methods and criteria of a student's knowledge evaluation:

In the 1st semester subject is credited under condition of the positive results of an oral and written tests and an oral presentation on a given scientific problem.

In the 11nd semester subject is credited under condition of the positive results of an oral and written tests as well as a computer presentation on a given scientific problem.

Accomplishment of the effects W2, W3, W4, U2, U4, U5, and K1 is verified during the final tests as well as during the computer presentation.

- mark 2 – less than 50% of the correct answers;
- mark 3 – 50 ÷ 60% of the correct answers;
- mark 3,5 – 61 ÷ 70% of the correct answers;
- mark 4 – 71 ÷ 80% of the correct answers;
- mark 4,5 – 81 ÷ 90% of the correct answers;
- mark 5 – more than 91% of the correct answers.

Mark 5 is given to a student who has acquired knowledge, skills and competencies contained in the teaching results system, is competent and persistent in knowledge acquirement.

Mark 4 is given to a student who has acquired knowledge, skills and competencies contained in the teaching results system on a good level.


Mark 3 is given to a student who has acquired knowledge, skills and competencies contained in the teaching results system on a satisfactory level.

Mark 2 is given to a student who has not acquired the basic knowledge, skills and competencies contained in the teaching results system and has not accomplished the necessary requirements.

Internship:

Form of studies:							
niestacjonarne							
Type of studies:							
I stopnia							
Type of the subject:							
obowiązkowy							
Introductory subjects:							
Mathematics, physics, general chemistry, rudiments of materials engineering							
Programs:							
Materials engineering : construction materials / functional materials							
Form of activities / number of hours/ requirements:							
Semester	x- examination, + credit, # project						ECTS
	total	lectures	exercises	laboratories	projects	seminars	
I	30		30 / +				2 ECTS
II	30		30 / +				2 ECTS
Author							
PhD, Eng. Wiesław Borys							
ECTS balance:							
SEM. I							
Ordinal number:	Activity:					Load [hrs]	ECTS:
1	Participation in lectures						
2	Individual studying the lecture assignment						
3	Participation in exercises					30	
4	Individual work on the preparation for exercises					18	
5	Participation in the laboratories						
6	Individual preparation for laboratories						
7	Participation in seminars						
8	Individual preparation for seminars						
9	Realization of the project						
10	Participation in consultations					10	
11	Preparation for examination						
12	Participation in examination						
Total student's workload						58	2 ECTS
Activities with the teacher: 1+3+5+7+9+10+12:						40	1.5 ECTS
Practical activities 5+6+9:							
Activities connected with scientific work 1+2+3+4+7+8:						48	1.5
ECTS balance:							
SEM. II							
Ordinal number:	Activity:					Load [hrs]	ECTS:
1	Participation in lectures						
2	Individual studying the lecture assignment						
3	Participation in exercises					30	
4	Individual work on the preparation for exercises					18	
5	Participation in laboratories						
6	Individual preparation for laboratories						
7	Participation in seminars						
8	Individual preparation for seminars						
9	Realization of the project						
10	Participation in consultations					10	
11	Preparation for examination						
12	Participation in examination						
Total student's workload :						58	2 ECTS
Activities with the teacher: 1+3+5+7+9+10+12:						40	1,5 ECTS

Practical activities 5+6+9:		
Activities connected with scientific work 1+2+3+4+7+8:	48	1,5 ECTS

AUTOR
KARTY INFORMACYJNEJ

doc. dr inż. Wiesław BORYS

KIEROWNIK JEDNOSTKI ORGANIZACYJNEJ
ODPOWIEDZIALNEJ ZA PRZEDMIOT


prof. dr hab. inż. Leszek JAROSZEWICZ