

## SYLLABUS

Name: Presentation of scientific and technical subjects (WTCNXCSM-PoSATS)

Name in Polish:

Name in English: Presentation of scientific and technical subjects

### Information on course:

Course offered by department: Faculty of Advanced Technologies and Chemistry

Course for department: Faculty of Advanced Technologies and Chemistry

### Default type of course examination report:

Graded pass

### Language:

English

### Short description:

Terminology of mathematics.  
Terminology of general physics  
Rudiments of materials engineering

### Description:

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 prod-uct. 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 chemis-try. 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. Characteristics of a substance. Macroscopic prop-erties of matter. Physical methods for research of macroscopic properties of matter. Instrumental methods in chemistry.
11. Examples of written and spoken description of scientific and technological topics. Written presentations of chosen physical and chemical phenomena. Analysis of popularized scientific texts oriented towards understanding of English applied in chemistry and chemical technology. Oral presentations of some chosen topics on chemistry.

### Bibliography:

Basic:

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.

Complementary:

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

### Learning outcomes:

Symbol / Efekty uczenia się / Odniesienie do efektów kierunku

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\_U015

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

### Assessment methods and assessment criteria:

The subject is credited under condition of the positive results of the oral seminar presentation of a chosen problem in English within the range of electronics and its consequent preparation for publication in a scientific journal.

The final mark is the arithmetical average of the marks obtained for the two requirements mentioned above.

Accomplishment of the effects W1, W2, W3, W4, U3, U4, K1 i K3 is verified during the oral presentation and during formulation and preparation of the paper.

mark 2 – less than 50% of the required knowledge;

mark 3 – 50 ÷ 60% of the required knowledge;

mark 3,5 – 61 ÷ 70% of the required knowledge;

mark 4 – 71 ÷ 80% of the required knowledge;

mark 4,5 – 81 ÷ 90% of the required knowledge;  
 mark 5 – more than 91% of the required knowledge.  
 Mark 5 is given to a student who has acquired knowledge, skills and competencies contained in the teaching results system, is competent and consistent in the knowledge acquirement process.  
 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.

**Mode of study**

full-time studies

**Form of study**

second-cycle studies

**Course**

mandatory

**Introductory subjects**

- general physics and mathematics at a level of a technical university
- English within the range of secondary comprehensive school

**Programs**

materials engineering

**Form of course / number of hours / final requirement**

Exercises/30 h/+

**Author**

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**ECTS balance**

*missing value in English*

**Course credits in various terms:**

<without a specific program>			
Type of credits	Number	First term	Last term
European Credit Transfer System (ECTS)	2	2019/20L	