GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

| | | | |
|---|---|---|---|
| Subject name and code | Methods of Design of Experiments, PG_00039756 | | |
| Field of study | Materials Engineering, Materials Engineering, Materials Engineering, Materials Engineering | | |
| Date of commencement of studies | October 2020 | Academic year of realisation of subject | 2022/2023 |
| Education level | first-cycle studies | Subject group | Optional subject group |
| Mode of study | Full-time studies | Mode of delivery | at the university |
| Year of study | 3 | Language of instruction | Polish |
| Semester of study | 6 | ECTS credits | 2.0 |
| Learning profile | general academic profile | Assessment form | assessment |
| Conducting unit | Instytut Nanotechnologii i Inżynierii Materiałowej -> Faculty of Applied Physics and Mathematics | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | prof. dr hab. inż. Bogusław Kusz | |
| | Teachers | prof. dr hab. inż. Bogusław Kusz | |

**Lesson types and methods of instruction**

| Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
|---|---|---|---|---|---|---|
| Number of study hours | 15.0 | 0.0 | 15.0 | 0.0 | 0.0 | 30 |

E-learning hours included: 0.0

**Learning activity and number of study hours**

| Learning activity | Participation in didactic classes included in study plan | Participation in consultation hours | Self-study | SUM |
|---|---|---|---|---|
| Number of study hours | 30 | 2.0 | 18.0 | 50 |

**Subject objectives**

Learning how to plan an experiment which help to solve a scientific problem in the field of materials science.

**Learning outcomes**

| Course outcome | Subject outcome | Method of verification |
|---|---|---|
| K6_K02 | The student can work in a team. | [SK4] Assessment of communication skills, including language correctness |
| K6_W04 | The student knows the standard measuring instruments. | [SW3] Assessment of knowledge contained in written work and projects |
| K6_W06 | The student knows the basic methods of solving basic engineering problems. | [SW3] Assessment of knowledge contained in written work and projects |
| K6_U06 | The student is able to evaluate and use information. | [SU2] Assessment of ability to analyse information |
| K6_K01 | The student knows his abilities and limitations. | [SK3] Assessment of ability to organize work |

**Subject contents**

1. Reason and experiment as ways of knowing reality. 2. Object of research and types of experiment plans. 3. Planning, analysis of measurement results and uncertainties, and publication of the results of simple and complex experiments.

**Prerequisites and co-requisites**

There isn't

**Assessment methods and criteria**

| Subject passing criteria | Passing threshold | Percentage of the final grade |
|---|---|---|
| zaliczenie pisemne | 51.0% | 41.0% |
| ocena sprawozdań | 100.0% | 59.0% |

**Recommended reading**

| | |
|---|---|
| Basic literature | Internet |
| Supplementary literature | not applicable |
| eResources addresses | Podstawowe<br>https://enauczanie.pg.edu.pl/moodle/course/view.php?id=30262 - e-course<br>Adresy na platformie eNauczanie: |

| | |
|---|---|
| Example issues/ example questions/ tasks being completed | 1. The ability to calculate the standard deviation of the average value of the results of many measurements.<br><br>2. The ability to calculate the uncertainty of a complex quantity.<br><br>3. The ability to create a chart (graph of the function) on the basis of tabular data and to determine from the chart the basic parameter of the process described by the chart. Description with as much information as possible.<br><br>4. Ability to plan a simple experience.<br><br>5. What is a scientific problem and a non-scientific problem (according to own knowledge and according to K. Popper).<br><br>6. Description of the test object (general scheme): input/output and control variables, noise.<br><br>7. Experimental plan - types of plans: total, selective, optimized, randomized, |
| Work placement | Not applicable |