# GDAŃSK UNIVERSITY OF TECHNOLOGY

## Subject card

| | |
|---|---|
| Subject name and code | Measurement and control software, PG_00052091 |
| Field of study | Nanotechnology |

| | | | |
|---|---|---|---|
| Date of commencement of studies | October 2021 | Academic year of realisation of subject | 2023/2024 |
| Education level | first-cycle studies | Subject group | Optional subject group<br>Subject group related to scientific research in the field of study |
| 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 | 4.0 |
| Learning profile | general academic profile | Assessment form | assessment |

| | |
|---|---|
| Conducting unit | Department of Solid State Physics -> Faculty of Applied Physics and Mathematics |

| Name and surname of lecturer (lecturers) | Subject supervisor | dr inż. Marek Chmielewski |
|---|---|---|
| | Teachers | dr hab. inż. Leszek Piotrowski<br><br>dr inż. Marek Chmielewski |

| Lesson types and methods of instruction | Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
|---|---|---|---|---|---|---|---|
| | Number of study hours | 15.0 | 0.0 | 30.0 | 0.0 | 0.0 | 45 |
| | 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 | 45 | 6.0 | 49.0 | 100 |

| | |
|---|---|
| Subject objectives | Acquire knowledge for the programming skills in the LabView graphical programming language in level allowing for the accession to the CLAD certification exam |

| Learning outcomes | Course outcome | Subject outcome | Method of verification |
|---|---|---|---|
| | K6_U04 | In carrying out tasks related to the topics of laboratory student will know the correct methods of carrying out the experiment, will be able to realize and understand the need for multi-track analysis of the results. Properly provide calibration procedures, and effectively uses these results to determine the unknown parameters of the measured elements | [SU3] Assessment of ability to use knowledge gained from the subject<br>[SU1] Assessment of task fulfilment |
| | K6_W10 | The student performs and controls the measurement experiments to assess the quality of the tested materials and defines and identifies the defects existing in the material. | [SW1] Assessment of factual knowledge |
| | K6_K04 | Work in the laboratory in group consist with three students, currently in single groups person. Cooperation in order to achieve the intended results. Planning and allocation of functions and roles in the process of handling the measuring equipment and data acquisition. | [SK1] Assessment of group work skills |
| | K6_U05 | The student will know the capabilities of different measurement techniques, discovers and suggests the possibility of their effective use in areas other than those performed during the lab. Learns software capabilities for advanced digital signal processing | [SU4] Assessment of ability to use methods and tools<br>[SU1] Assessment of task fulfilment |
| | K6_W04 | The student is able to use the programming environment to present the result of the software work, he is able to conduct the process of communication and data exchange in formats that enable communication between programming platforms and systems presenting results in various forms, including graphic format. | [SW1] Assessment of factual knowledge |

| Subject contents | The content of the course is to understand and practical use of the LabView programming environment. Lecture and lab will be held under the patronage and the strict supervision of the National Instrument. In a series of lectures and labs, students will learn about the basic techniques of programming in LabView environment. Will explore the issues of control systems, measurement and control using LabView. On the lecture and laboratory will be presented the capacity of the LabView environment and its versatility in contemporary science and industry. |
|---|---|
| Prerequisites and co-requisites | Basic programming skills in scripting programming languages (C, Fortran, etc.). |

| Assessment methods and criteria | Subject passing criteria | Passing threshold | Percentage of the final grade |
|---|---|---|---|
| | Test funkcjonalności i estetyka | 60.0% | 100.0% |

| Recommended reading | Basic literature | National Instrument - Internet sources |
|---|---|---|
| | Supplementary literature | not required |
| | eResources addresses | Adresy na platformie eNauczanie:<br><br>OPIS 2024 - Moodle ID: 38527<br>https://enauczanie.pg.edu.pl/moodle/course/view.php?id=38527 |

| Example issues/ example questions/ tasks being completed | Consistent with the themes available on the website of National Instruments in the subject of the CLAD exam |
|---|---|
| Work placement | Not applicable |