



## Subject card

|   |  |   |                                     |            |  |         |     |
|---|--|---|-------------------------------------|------------|--|---------|-----|
| Subject name and code                       | , PG_00052088  |   |                                     |            |  |         |     |
| 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                             | Instytut Nanotechnologii i Inżynierii Materiałowej -> Faculty of Applied Physics and Mathematics   |   |                                     |            |  |         |     |
| Name and surname of lecturer (lecturers)    | Subject supervisor   | dr hab. inż. Agnieszka Witkowska  |                                     |            |  |         |     |
|   | Teachers   | dr hab. inż. Agnieszka Witkowska<br>dr inż. Marek Augustyniak<br>dr inż. Marta Prześniak-Welenc<br>dr inż. Magdalena Jażdżewska<br>dr inż. Beata Majkowska-Marzec<br>dr inż. Łukasz Pawłowski |                                     |            |  |         |     |
| Lesson types and methods of instruction     | Lesson type  | Lecture   | Tutorial                            | Laboratory | Project  | Seminar | SUM |
|   | Number of study hours  | 0.0   | 0.0                                 | 0.0        | 45.0   | 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  | 5.0                                 |            | 50.0   | 100     |     |
| Subject objectives                          | The aim of the course is:<br><br>1. preparing students to complete an engineering diploma project, including: engineering and non-engineering aspects, proper and critical selection of source materials, literature review, planning and implementing the experimental or numerical-simulation part of an engineering project;<br><br>2. presenting students the diploma examination procedure and preparing them for an oral presentation of the results of the diploma project. |   |                                     |            |  |         |     |

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| Learning outcomes               | Course outcome  | Subject outcome   | Method of verification  |
|                                 | K6_U04  | After getting acquainted with the research problem, the student has the ability to plan an experiment and select the appropriate experimental tools, analyse research results and conduct a critical discussion.  | [SU2] Assessment of ability to analyse information  |
|                                 | K6_U11  | The student has the ability to prepare the proper structure of a scientific work and write its introductory part, and is able to prepare a professional presentation template for an oral presentation (in Polish), presenting issues from the diploma project.   | [SU4] Assessment of ability to use methods and tools<br>[SU1] Assessment of task fulfilment |
|                                 | K6_U07  | After analyzing a simple research/technical problem (including the engineering project selected for implementation), the student is able to perform a preliminary economic analysis of planned experiments and activities aimed at solving the problem.   | [SU3] Assessment of ability to use knowledge gained from the subject                        |
| K6_K05                          | The student has the ability to prepare and orally present the results of their work and participate in discussions, in Polish, on the issues analyzed in the discussed diploma projects. He is able to constructively evaluate his own results and the results of others.   | [SK4] Assessment of communication skills, including language correctness  |   |
| Subject contents                | <p>Part 1.<br/>Writing a diploma thesis - introduction;<br/>Effective and critical search of internet resources;<br/>Literature databases: tools for searching databases and creating a reference list;<br/>Literature review related to diploma thesis.</p> <p>Part 2.<br/>Skills of conducting white intelligence;<br/>Meetings with graduates;<br/>Trip(s) to places where internships were held and/or to places potentially attractive from the point of view of professional career;<br/>Professional mentoring, CV preparation.</p> <p>Part 3.<br/>Diploma procedure;<br/>Diploma presentation: elements of the presentation, the way of presenting the content and scientific results;<br/>Preparation of a presentation template;<br/>Oral presentation training: presentation and discussion of the preliminary results of the diploma project.</p> |   |   |
| Prerequisites and co-requisites |   |   |   |
| Assessment methods and criteria | Subject passing criteria  | Passing threshold   | Percentage of the final grade   |
|                                 | Part 1. Preparation of the bibliography for the diploma thesis; Part 2. Completion of two mini-tasks; Part 3. Seminar preparation and presentation  | 50.0%   | 100.0%  |
| Recommended reading             | Basic literature  | Hugh G. Gauch Jr., Scientific Methods in Brief, Cambridge University Press, 2012  |   |
|                                 | Supplementary literature  | PN-ISO 690, 2012 "Information and documentation - Guidelines of bibliographic footnotes and references to information resources"  |   |
|                                 | eResources addresses  | Uzupełniająca<br>Adresy na platformie eNauczanie:<br>Projekt dyplomowy inżynierski I - NT 2024 - Moodle ID: 36146<br><a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=36146">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=36146</a><br>Projekt dyplomowy inżynierski I - NT 2024 - Moodle ID: 36146<br><a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=36146">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=36146</a> |   |

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| Example issues/<br>example questions/<br>tasks being completed | Present your project/idea in the most attractive form for the "investor".<br>Find the original source of requested information and determine if and what is fake news.<br>White interview in practice - check the credibility and attractiveness of the selected company. |
| Work placement   | Not applicable  |