



Subject card

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| Subject name and code | Safety in Nanotechnology, PG_00037200 | | | | | | |
| Field of study | Nanotechnology | | | | | | |
| Date of commencement of studies | October 2020 | | Academic year of realisation of subject | | 2023/2024 | | |
| Education level | first-cycle studies | | Subject group | | Humanistic-social subject group | | |
| Mode of study | Full-time studies | | Mode of delivery | | at the university | | |
| Year of study | 4 | | Language of instruction | | Polish | | |
| Semester of study | 7 | | ECTS credits | | 1.0 | | |
| Learning profile | general academic profile | | Assessment form | | assessment | | |
| Conducting unit | Department of Materials Engineering and Bonding -> Faculty of Mechanical Engineering and Ship Technology | | | | | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | | dr hab. inż. Aleksandra Mielewczyk-Gryń | | | | |
| | Teachers | | dr hab. inż. Aleksandra Mielewczyk-Gryń | | | | |
| Lesson types and methods of instruction | Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
| | Number of study hours | 15.0 | 0.0 | 0.0 | 0.0 | 0.0 | 15 |
| | 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 | 15 | | 1.0 | | 9.0 | 25 |
| Subject objectives | The aim of this course is a gaining of knowledge on possible hazards at the production of nanomaterials or work in an environment containing nanomaterials, and countermeasures decreasing or eliminating such hazards. | | | | | | |
| Learning outcomes | Course outcome | | Subject outcome | | Method of verification | | |
| | K6_U10 | | Based on the acquired knowledge, it can prevent biological and ecological threats resulting from the production of nanostructures on an industrial scale and their practical applications. | | [SU1] Assessment of task fulfilment | | |
| | [K6_W71] has general knowledge in humanistic, social, economic or legal sciences | | Student can understand and present the positive and negative attitudes towards nanotechnology. | | [SW1] Assessment of factual knowledge | | |
| | [K6_K71] is conscious of the need to apply knowledge from humanistic, social, economic or legal sciences in order to function in a social environment | | Student understands a necessity to implement a law. He/she can characterize the law regulations towards import, manufacturing and sale of products containing nanomaterials. | | [SK2] Assessment of progress of work [SK4] Assessment of communication skills, including language correctness [SK5] Assessment of ability to solve problems that arise in practice | | |
| Subject contents | Social audience of nanotechnology and associated hazards. The health hazards. The law and technical mens to prevent the hazards caused by an application of nanotechnology. The law regulations of European Community in area of nanotechnology. The law regulations for chemical substances. The law regulations for cosmetic products, biocides, foods and food packages, medical and therapeutical products. The safety of employes. The environment safety: protection of water, soli and air, wastes. | | | | | | |
| Prerequisites and co-requisites | None | | | | | | |
| Assessment methods and criteria | Subject passing criteria | | Passing threshold | | Percentage of the final grade | | |
| | Written exam | | 50.0% | | 100.0% | | |

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| Recommended reading | Basic literature | <ol style="list-style-type: none"> Łopacka J. Półtorak A.: Zagrożenia związane z wykorzystaniem nanotechnologii w produkcji opakowań do żywności w świetle badań naukowych i w opinii konsumentów. Problemy Higieny i Epidemiologii 94 (2013) 172-178. Zapór L.: Bezpieczeństwo i higiena pracy a rozwój nanotechnologii. Bezpieczeństwo i Higiena Pracy, nr 2 (2012) 4-7. Nanotechnologies: a preliminary risk analysis on the basis of a workshop organized in Brussels on 12 March 2004 by the Health and Consumer Protection Directorate General of the European Commission. http://europa.eu.int/comm/health/ph_risk/events_risk_en.htm Waszkiewicz-Robak B., Świderski F.: NANOTECHNOLOGIA KORZYŚCI I ZAGROŻENIA ZDROWOTNE. Bromatologia i Chemia Toksykologiczna 16, nr 3 (2008) 202-208. |
| | Supplementary literature | <ol style="list-style-type: none"> Jurewicz M.: Nanotechnologia. Regulacje prawne. Legislacja Unii Europejskiej. Difin 2014. http://ec.europa.eu/polska/news/121003_nanotechnologia_pl.htm |
| | eResources addresses | Adresy na platformie eNauczanie: Bezpieczeństwo w Nanotechnologii - Moodle ID: 33120 https://enauzanie.pg.edu.pl/moodle/course/view.php?id=33120 |
| Example issues/ example questions/ tasks being completed | <ol style="list-style-type: none"> Health hazards Law regulations for chemical substances Law regulations for foods and food packages | |
| Work placement | Not applicable | |