



Subject card

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| Subject name and code | Introduction to Materials Science - laboratory, PG_00029486 | | | | | | |
| Field of study | Nanotechnology | | | | | | |
| Date of commencement of studies | October 2021 | Academic year of realisation of subject | | | 2022/2023 | | |
| Education level | first-cycle studies | Subject group | | | Obligatory subject group in the field of study 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 | 2 | Language of instruction | | | Polish | | |
| Semester of study | 3 | 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 | prof. dr hab. inż. Maria Gazda | | | | | |
| | Teachers | Arkadiusz Dawczak prof. dr hab. inż. Maria Gazda Daria Balcerzak Jagoda Budnik | | | | | |
| Lesson types and methods of instruction | Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
| | Number of study hours | 0.0 | 0.0 | 15.0 | 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 the lecture is gaining the knowledge on fundamentals of materials engineering and construction and functional materials. | | | | | | |
| Learning outcomes | Course outcome | | Subject outcome | | | Method of verification | |
| | K6_W06 | | The student has basic and in-depth knowledge of the structure of crystals and amorphous bodies, bonds in solids, defects in the crystal structure and their impact on the properties of materials. | | | [SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects | |
| | K6_K04 | | Students can work in groups. | | | [SK1] Assessment of group work skills | |
| Subject contents | Division and general characteristics of the materials. Of alloys. System phase balance iron carbon and iron-cementite. Alloys of iron with carbon steel, cast steel and cast iron. Heat treatment and thermo - chemical non-alloyed steels. | | | | | | |
| Prerequisites and co-requisites | Knowledge of the lecture Fundamentals of Materials Science II. | | | | | | |
| Assessment methods and criteria | Subject passing criteria | | Passing threshold | | | Percentage of the final grade | |
| | Preliminary test | | 50.0% | | | 50.0% | |
| | Report from lab exercise | | 50.0% | | | 50.0% | |

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| Recommended reading | Basic literature | <p>1. Blicharski M.: Inżynieria materiałowa. Stal. WNT, Warszawa 2004.</p> <p>2. Blicharski M.: Wstęp do inżynierii materiałowej. WNT, Warszawa 2004.</p> <p>3. Dobrzański L.A.: Podstawy nauki o materiałach i metaloznawstwo. WNT, Warszawa, 2002</p> <p>4. Grabski W., Kozubowski J.: Istota inżynierii materiałowej - geneza, istota, perspektywy. Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa 2003.</p> <p>5. Praca zbiorowa pod red. M. Głowackiej i A. Zielińskiego: Metaloznawstwo. Wyd. Politechniki Gdańskiej, Gdańsk 2011 (strona sieciowa Politechniki Gdańskiej).</p> |
| | Supplementary literature | 1. Dobrzański L.A.: Metalowe materiały inżynierskie. WNT Warszawa 2004 2. Przybyłowicz K.: Metaloznawstwo. WNT, Warszawa 2003. |
| | eResources addresses | Adresy na platformie eNauczanie: |
| Example issues/ example questions/ tasks being completed | <p>1. Research metallographic</p> <p>2. Effect on the properties of the metal matrix graphite cast iron</p> <p>3. Draw the equilibrium phase diagram iron - cementite</p> <p>4. Selection of temperature hardening steel</p> <p>5. What is carried out carburizing</p> | |
| Work placement | Not applicable | |