



Subject card

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|---|---|---|-------------------------------------|------------|--|---------|-----|
| Subject name and code | Standardization and quality assessment, PG_00039627 | | | | | | |
| Field of study | Materials Engineering, Materials Engineering | | | | | | |
| Date of commencement of studies | February 2024 | Academic year of realisation of subject | | | 2024/2025 | | |
| Education level | second-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 | | | blended-learning | | |
| Year of study | 1 | Language of instruction | | | Polish | | |
| Semester of study | 2 | ECTS credits | | | 2.0 | | |
| Learning profile | general academic profile | Assessment form | | | assessment | | |
| Conducting unit | Zakład Technologii Materiałów Konstrukcyjnych i Spajania -> Institute of Manufacturing and Materials Technology -> Faculty of Mechanical Engineering and Ship Technology | | | | | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | prof. dr hab. inż. Jerzy Łabanowski | | | | | |
| | Teachers | prof. dr hab. inż. Jerzy Łabanowski | | | | | |
| Lesson types and methods of instruction | Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
| | Number of study hours | 15.0 | 15.0 | 0.0 | 0.0 | 0.0 | 30 |
| | E-learning hours included: 15.0 | | | | | | |
| 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 | 5.0 | | 15.0 | 50 | |
| Subject objectives | To acquaint students with the principles of normalization and classification of construction materials included in the standards and technical industry regulations. | | | | | | |
| Learning outcomes | Course outcome | Subject outcome | | | Method of verification | | |
| | K7_K01 | The student is able to evaluate the content and prepare documents regarding the quality of metal products and semi-finished products. He can plan and carry out control tests of steel products | | | [SK5] Assessment of ability to solve problems that arise in practice | | |
| | K7_W05 | Recognizes the indication of steel and non-ferrous alloys. Presents the terminology of metal products and semi-finished | | | [SW1] Assessment of factual knowledge | | |
| | K7_U01 | The student knows the rules of presenting the results of control tests of metallic materials | | | [SU3] Assessment of ability to use knowledge gained from the subject | | |
| Subject contents | <p>LECTURE Classification of steel, cast steel, cast iron, non-ferrous metals and their alloys, division into classes and categories. Rules for marking grades of ferrous and non-ferrous metal alloys according to Polish and European standards, ISO and American AISI, UNS. Semi-finished and metallurgical products - terminology, forms and classification states, stamping, packing, transport. Steel products and metallurgical products of non-ferrous metals - rolled products, forgings, drawn and extruded products, castings, metal powders and sintered products metal powders. Unification and standardization of marking of steel products. Review of groups and requirements for metal materials used in various branches of the economy: materials for the energy sector conventional and nuclear, materials for marine structures, materials for the automotive industry and aviation, materials for the chemical and petrochemical industries, materials for construction. Recipes specifying acceptance requirements for steel products (standards, regulations of Ship Companies Classification regulations, UDT regulations). Principles of selecting substitutes for steel and non-ferrous metal alloys. TUTORIALS Practical use of regulations and standards specifying requirements for products metallurgical. Determining the acceptance requirements for rolled, forged, drawn, and steel products steel castings. Setting criteria and selecting materials for specific industrial applications automotive, aviation, petrochemical, shipbuilding in nuclear and conventional energy and construction. Selection of substitutes for steel, cast steel and cast iron according to Polish and foreign standards - exercise in using a computer database. .</p> | | | | | | |
| Prerequisites and co-requisites | | | | | | | |

| Assessment methods and criteria | Subject passing criteria | Passing threshold | Percentage of the final grade |
|--|--|--|-------------------------------|
| | sprawozdania | 50.0% | 40.0% |
| | kol. zaliczeniowe | 50.0% | 60.0% |
| Recommended reading | Basic literature | 1. Blicharski M.: Inżynieria materiałowa. Stal. WNT Warszawa, 2004 2. Dobrzański L.: Podstawy nauki o materiałach i metaloznawstwo. WNT, Warszawa 2002. 3. Łabanowski J.: Ocena jakości wyrobów hutniczych. Wyd. PWSZ w Elblągu, Elbląg 2012 4. Adamczyk J.: Inżynieria materiałów metalowych, cz I i II. Wyd. Politechniki Śląskiej, Gliwice 2004. | |
| | Supplementary literature | 1. Dobrzański L.A.: Materiały inżynierskie i projektowanie materiałowe. WNT, Warszawa, 2005. 2. Standards; PN, PN-EN, ISO, ASTM, przepisy UDT. 3. Ship Classification Society rules: PRS, DNV, LR, GL. | |
| | eResources addresses | Adresy na platformie eNauczanie: | |
| Example issues/ example questions/ tasks being completed | <p>What is the form and qualification condition of a steel product?</p> <p>General classification of non-ferrous metals and their alloys</p> <p>Provide a scheme for classifying steel into groups,</p> <p>What is the basic division of steel according to the current standards</p> <p>What are the strength categories and ductility varieties of weldable structural steels?</p> <p>Classification of stainless steels due to their structure,</p> <p>Principles of marking steel for heavy plates for shipbuilding</p> <p>Explain the given metallurgical terms:</p> <p>What types of marks are used in the guild hallmarking of steel products?</p> <p>What normative documents may regulate the receipt of metallurgical products or semi-finished products?</p> <p>Explain the given designations of steels and non-ferrous alloys</p> | | |
| Work placement | Not applicable | | |