

GDAŃSK UNIVERSITY

Subject card

| Subject name and code | Wheels and Tyres, PG_00055516 | | | | | | | | |
|---|--|--|--|---|------------------------|---|---------|-----|--|
| Field of study | Mechanical Engineering | | | | | | | | |
| 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 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 | | | 3.0 | | | |
| Learning profile | general academic profile | | Assessment form | | | assessment | | | |
| Conducting unit | Institute of Mechanics and Machine Design -> Faculty of Mechanical Engineering and Ship Technology | | | | | | hnology | | |
| Name and surname | Subject supervisor | prof. dr hab. inż. Jerzy Ejsmont | | | | | | | |
| of lecturer (lecturers) | Teachers | | dr inż. Sławor dr hab. inż. G | mir Sommer | wski | | | | |
| Lesson types and methods | Lesson type | Lecture | Tutorial | Laboratory | Projec | t | Seminar | SUM | |
| of instruction | Number of study hours | 15.0 | 0.0 | 15.0 | 0.0 | | 0.0 | 30 | |
| | E-learning hours inclu | uded: 0.0 | | i | | i | | | |
| Learning activity and number of study hours | Learning activity | Participation in classes includ plan | n didactic ed in study | lactic Participation in n study consultation hours | | Self-study SUM | | | |
| | Number of study hours | 30 | 8.0 | | 37.0 | | 75 | | |
| Subject objectives | The aim of the course is to familiarize students with the history, construction and properties of car tires and wheels. | | | | | | | | |
| Learning outcomes | Course outcome | | Subject outcome | | Method of verification | | | | |
| | [K6_U05] is able to plant an experiment within the range of measuring the basic operating parameters of mechanical devices using a specialized equipment, interpret the results and reach the correct conclusions | | Ability to conduct development research and measurements related to car tires. | | | [SU1] Assessment of task fulfilment | | | |
| | [K6_W08] possesses basic knowledge including the methodology of designing machine parts, mechanical devices, selection of construction materials, manufacturing and operation, with the lifetime cycle | | Ability to select tires, their handling and verification. | | | [SW1] Assessment of factual knowledge | | | |
| Subject contents | | | | | | | | | |
| | Background information. History of wheel and tire development. Types of tire construction, sizes and markings, conditions for admission to traffic in Europe and the USA. Mechanics of interaction between the tire and the surface. Characteristics of radial and diagonal tires. Grip, skid, rolling resistance. Selection of tires for the vehicle and operating conditions. Winter and summer tires. Studs, snow chains and protective chains. Tire production technology. Cord production, tire assambling, molding and vulcanization. Basics of tire operation. Selection of inflation pressure, maintaining proper loads, repairing tires. Construction of car wheels - wheels for passenger cars, wheels for trucks. Unconventional wheels and car tires.Measurements of basic tire parameters: skid resistance, stiffness, rolling resistance, noise. | | | | | | | | |

| Prerequisites and co-requisites | | | | | |
|--|------------------------------------|---|-------------------------------|--|--|
| Assessment methods and criteria | Subject passing criteria | Passing threshold | Percentage of the final grade | | |
| | Completion of laboratory exercises | 80.0% | 50.0% | | |
| | Passing test | 51.0% | 50.0% | | |
| Recommended reading | Basic literature | U. Sandberg, J. Ejsmont: Tire/road noise - reference book J.Jaworski, Ogumienie pojazdów samochodowych | | | |
| | Supplementary literature | - | | | |
| | eResources addresses | Adresy na platformie eNauczanie: Koła i ogumienie / Wykład / MiBM / sem. VI / I st. / sem. letni 2023/2024 (PG_00055516) - Moodle ID: 38610 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=38610 | | | |
| Example issues/ example questions/ tasks being completed | - | | | | |
| Work placement | Not applicable | | | | |