



## Subject card

|   |  |  |                                |                                     |                        |            |     |
|---|--|--|--------------------------------|-------------------------------------|------------------------|------------|-----|
| Subject name and code                       | Team project, PG_00059387  |  |                                |                                     |                        |            |     |
| Field of study                              | Mechanical Engineering   |  |                                |                                     |                        |            |     |
| Date of commencement of studies             | February 2024  | Academic year of realisation of subject                  |                                |                                     | 2024/2025              |            |     |
| Education level                             | second-cycle studies   | Subject group  |                                |                                     | Optional subject group |            |     |
| Mode of study                               | Part-time studies  | Mode of delivery   |                                |                                     | at the university      |            |     |
| Year of study                               | 1  | Language of instruction                                  |                                |                                     | Polish                 |            |     |
| Semester of study                           | 2  | ECTS credits   |                                |                                     | 4.0                    |            |     |
| Learning profile                            | general academic profile   | Assessment form  |                                |                                     | assessment             |            |     |
| Conducting unit                             | Zakład Hydrauliki i Pneumatyki -> Institute of Mechanics and Machine Design -> Faculty of Mechanical Engineering and Ship Technology |  |                                |                                     |                        |            |     |
| Name and surname of lecturer (lecturers)    | Subject supervisor   |  | dr hab. inż. Grzegorz Ronowski |                                     |                        |            |     |
|   | Teachers   |  |                                |                                     |                        |            |     |
| Lesson types and methods of instruction     | Lesson type  | Lecture  | Tutorial                       | Laboratory                          | Project                | Seminar    | SUM |
|   | Number of study hours  | 0.0  | 0.0                            | 0.0                                 | 18.0                   | 0.0        | 18  |
|   | 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  | 18   |                                | 8.0                                 |                        | 74.0       | 100 |
| Subject objectives                          | Mastering the ability to work in a group when carrying out an engineering project.   |  |                                |                                     |                        |            |     |

| Learning outcomes | Course outcome   | Subject outcome  | Method of verification   |
|-------------------|--|--|--|
|                   | [K7_K04] is able to establish professional contacts and is able to lead and work in a team assuming various roles in the team; is able to show resourcefulness and innovation when realizing professional projects   | The student is able to solve problems creatively.  | [SK5] Assessment of ability to solve problems that arise in practice<br>[SK1] Assessment of group work skills<br>[SK2] Assessment of progress of work      |
|                   | [K7_K01] is aware of the need for complementing the knowledge throughout the whole life, is able to select proper methods of teaching and learning   | The student is able to draw conclusions from the teacher's comments, learn from them and make changes to the project.                    | [SK2] Assessment of progress of work   |
|                   | [K7_U08] is able to design a procedural equipment or device compliant with the specifications using a design aid system in the form of a design documentation, selecting the appropriate model, performing critical analysis with the proper selection of tools and technologies   | The student is able to make a technical design of the device demonstrating the knowledge and skills acquired in previous years of study. | [SU1] Assessment of task fulfillment<br>[SU4] Assessment of ability to use methods and tools<br>[SU5] Assessment of ability to present the results of task |
|                   | [K7_U01] is able to acquire information from specialist literary sources and other sources regarding the construction and operation of machines and related disciplines in Polish and in a foreign language, is able to conduct a self-learning process, is able to synthesize the information, form conclusions and justify opinions  | The student is able to effectively find the information necessary to complete the task   | [SU1] Assessment of task fulfillment<br>[SU3] Assessment of ability to use knowledge gained from the subject   |
|                   | [K7_U04] is able to prepare and present a presentation of a solution of a construction or technological task and results of performed experiments including the analysis of the results and possible changes in Polish or in a foreign language, is able to organize and manage the work of a team, directing the tasks  | The student is able to present his work to team members, other students and the lecturer.  | [SU1] Assessment of task fulfillment<br>[SU5] Assessment of ability to present the results of task   |
| Subject contents  | <p>Students learn to use in practice the knowledge gained in their earlier years of study. By implementing group projects, they learn to cooperate with each other, organize work and solve complex engineering problems together. The classes are consultative in nature, in which the students solve the problem presented to them by the tutor, and the tutor checks the progress of work and helps students in the event that they cannot find a solution.</p> <p>Framework plan of the course:</p> <ol style="list-style-type: none"> <li>1. Division into groups, defining the rules for carrying out classes, assigning tasks,</li> <li>2. Presentation of the progress of work carried out according to a predetermined schedule,</li> <li>3. Presentation of the results of the work in front of the entire class</li> <li>4. Presentation for evaluation of the technical project</li> </ol> |  |  |

| Prerequisites and co-requisites                          | Items passed:<br><br>1. Basics of machine design<br><br>2. Basics of hydraulics and pneumatics  |  |                   |                               |              |       |       |      |       |       |  |  |
|--|---|--|-------------------|-------------------------------|--------------|-------|-------|------|-------|-------|--|--|
| Assessment methods and criteria                          | <table border="1"> <thead> <tr> <th data-bbox="454 396 791 427">Subject passing criteria</th> <th data-bbox="801 396 1139 427">Passing threshold</th> <th data-bbox="1144 396 1492 427">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="454 434 791 465">Presentation</td> <td data-bbox="801 434 1139 465">56.0%</td> <td data-bbox="1144 434 1492 465">30.0%</td> </tr> <tr> <td data-bbox="454 472 791 504">Task</td> <td data-bbox="801 472 1139 504">56.0%</td> <td data-bbox="1144 472 1492 504">70.0%</td> </tr> </tbody> </table> | Subject passing criteria   | Passing threshold | Percentage of the final grade | Presentation | 56.0% | 30.0% | Task | 56.0% | 70.0% |  |  |
| Subject passing criteria                                 | Passing threshold   | Percentage of the final grade  |                   |                               |              |       |       |      |       |       |  |  |
| Presentation   | 56.0%   | 30.0%  |                   |                               |              |       |       |      |       |       |  |  |
| Task   | 56.0%   | 70.0%  |                   |                               |              |       |       |      |       |       |  |  |
| Recommended reading                                      | Basic literature  | Skrypty wydane na PG: Wały i Osie, Połączenia wału z piastą, Elementy podatne, Łożyska ślizgowe i inne<br><br>Hydrostatyczny napęd maszyn - Andrzej Osiecki<br><br>Vademecum Hydrauliki - Bosch Rexroth<br><br>Wzory, wykresy i tablice wytrzymałościowe - Niezgodziński |                   |                               |              |       |       |      |       |       |  |  |
|  | Supplementary literature  | Podstawy Konstrukcji Maszyn Wybrane zagadnienia; Marek Kochanowski skrypt PG 2002r.<br><br>Podstawy konstrukcji maszyn pod redakcją Marka Dietricha, WNT 1999 (wiele wydań w różnych latach)<br><br>Napęd hydrostatyczny - Stefan Stryczek                               |                   |                               |              |       |       |      |       |       |  |  |
|  | eResources addresses  | Adresy na platformie eNauczanie:   |                   |                               |              |       |       |      |       |       |  |  |
| Example issues/ example questions/ tasks being completed | Design of pressure relief valve<br><br>Design of hydraulic cylinder   |  |                   |                               |              |       |       |      |       |       |  |  |
| Work placement   | Not applicable  |  |                   |                               |              |       |       |      |       |       |  |  |