



Subject card

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|---|---|--|--|-------------------------------------|--|------------|-----|
| Subject name and code | Physics, PG_00048910 | | | | | | |
| Field of study | Chemistry in Construction Engineering | | | | | | |
| Date of commencement of studies | October 2022 | Academic year of realisation of subject | | | 2022/2023 | | |
| Education level | first-cycle studies | Subject group | | | Obligatory subject group in the field of study | | |
| Mode of study | Full-time studies | Mode of delivery | | | at the university | | |
| Year of study | 1 | Language of instruction | | | Polish | | |
| Semester of study | 1 | ECTS credits | | | 3.0 | | |
| Learning profile | general academic profile | Assessment form | | | assessment | | |
| Conducting unit | Department of Theoretical Physics and Quantum Information -> Faculty of Applied Physics and Mathematics | | | | | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | | dr inż. Ewa Erdmann | | | | |
| | Teachers | | | | | | |
| 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: 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 | 30 | | 5.0 | | 40.0 | 75 |
| Subject objectives | Introduction to the topics of classical mechanics | | | | | | |
| Learning outcomes | Course outcome | | Subject outcome | | Method of verification | | |
| | K6_W02 | | Knows fundamental physical structures and is able to solve concrete models | | [SU1] Assessment of task fulfilment | | |
| | K6_U02 | | Solving physics problems develops capabilities of individual work | | [SU2] Assessment of ability to analyse information | | |

| Subject contents | <p>Vectors</p> <p>Velocity and acceleration as time derivatives</p> <p>Newton's laws</p> <p>Momentum conservation</p> <p>Examples of forces</p> <p>Potential forces</p> <p>Examples of potentials</p> <p>Work as an integral</p> <p>Harmonic oscillator</p> <p>Integration of Newton equations for various forces</p> <p>Kinetic energy</p> <p>Energy conservation for potential forces</p> <p>Angular momentum</p> <p>Rotations</p> <p>Angular momentum conservation</p> | | | | | | | | | | | |
|--|--|--|-------------------|-------------------------------|-----------|-------|-------|------|-------|-------|--|--|
| Prerequisites and co-requisites | no requirements | | | | | | | | | | | |
| Assessment methods and criteria | <table border="1"> <thead> <tr> <th data-bbox="456 1352 786 1386">Subject passing criteria</th> <th data-bbox="791 1352 1137 1386">Passing threshold</th> <th data-bbox="1142 1352 1481 1386">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="456 1393 786 1426">exercises</td> <td data-bbox="791 1393 1137 1426">60.0%</td> <td data-bbox="1142 1393 1481 1426">50.0%</td> </tr> <tr> <td data-bbox="456 1433 786 1458">exam</td> <td data-bbox="791 1433 1137 1458">60.0%</td> <td data-bbox="1142 1433 1481 1458">50.0%</td> </tr> </tbody> </table> | Subject passing criteria | Passing threshold | Percentage of the final grade | exercises | 60.0% | 50.0% | exam | 60.0% | 50.0% | | |
| Subject passing criteria | Passing threshold | Percentage of the final grade | | | | | | | | | | |
| exercises | 60.0% | 50.0% | | | | | | | | | | |
| exam | 60.0% | 50.0% | | | | | | | | | | |
| Recommended reading | Basic literature | AK Wróblewski, JA Zakrzewski, Wstęp do fizyki, PWN, 1979 | | | | | | | | | | |
| | Supplementary literature | Berkeley course of physics | | | | | | | | | | |
| | eResources addresses | Adresy na platformie eNauczanie: | | | | | | | | | | |
| Example issues/ example questions/ tasks being completed | <p>Solve equations of motion of a harmonic oscillator</p> <p>Prove that total energy in constant gravitational field is time-independent</p> <p>Prove angular momentum conservation in a central potential</p> | | | | | | | | | | | |
| Work placement | Not applicable | | | | | | | | | | | |