

## Subject card

|                                             |                                                                                                                                                                                                                                                                                |                                                          |                                         |                                     |                                                |            |     |
|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|-----------------------------------------|-------------------------------------|------------------------------------------------|------------|-----|
| Subject name and code                       | Copy, PG_00155844                                                                                                                                                                                                                                                              |                                                          |                                         |                                     |                                                |            |     |
| Field of study                              | Physics                                                                                                                                                                                                                                                                        |                                                          |                                         |                                     |                                                |            |     |
| Date of commencement of studies             | October 2024                                                                                                                                                                                                                                                                   |                                                          | Academic year of realisation of subject |                                     | 2024/2025                                      |            |     |
| Education level                             | Master's 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<br>not applicable                       |            |     |
| Semester of study                           | 2                                                                                                                                                                                                                                                                              |                                                          | ECTS credits                            |                                     | 3.0                                            |            |     |
| Learning profile                            | academic                                                                                                                                                                                                                                                                       |                                                          | Assessment form                         |                                     | credit                                         |            |     |
| Conducting unit                             | Faculty of Mathematics, Physics and Informatics -> Rector                                                                                                                                                                                                                      |                                                          |                                         |                                     |                                                |            |     |
| Name and surname of lecturer (lecturers)    | Subject supervisor                                                                                                                                                                                                                                                             |                                                          | prof. dr hab. Michał Horodecki          |                                     |                                                |            |     |
|                                             | Teachers                                                                                                                                                                                                                                                                       |                                                          | Kamil Nalikowski                        |                                     |                                                |            |     |
| Lesson types                                | Lesson type                                                                                                                                                                                                                                                                    | Lecture                                                  | Tutorial                                | Laboratory                          | Project                                        | Seminar    | SUM |
|                                             | Number of study hours                                                                                                                                                                                                                                                          | 0.0                                                      | 45.0                                    | 0.0                                 | 0.0                                            | 0.0        | 45  |
|                                             | 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                                                                                                                                                                                                                                                          | 45                                                       |                                         | 0.0                                 |                                                | 45.0       | 90  |
| Subject objectives                          | not applicable                                                                                                                                                                                                                                                                 |                                                          |                                         |                                     |                                                |            |     |
| Learning outcomes                           | Course outcome                                                                                                                                                                                                                                                                 |                                                          | Subject outcome                         |                                     | Method of verification                         |            |     |
|                                             | [FIZMU2_U09] can work independently and in a team                                                                                                                                                                                                                              |                                                          | not applicable                          |                                     | [SU3] text preparation/written work            |            |     |
|                                             | [FIZMU2_U01] is able to apply the scientific method in solving physical problems, performing experiments and making inferences                                                                                                                                                 |                                                          | not applicable                          |                                     | [SU3] text preparation/written work            |            |     |
|                                             | [FIZMU2_K01] knows the limits of his own knowledge and skills; can formulate questions precisely; understands the need for further education of himself and others                                                                                                             |                                                          | not applicable                          |                                     | [SK3] text preparation/written work            |            |     |
|                                             | [FIZMU2_W02] has in-depth knowledge of advanced mathematics and mathematical and computer methods, necessary to solve physical problems of intermediate complexity and advanced in a selected area of physics                                                                  |                                                          | not applicable                          |                                     | [SW3] text preparation/written work            |            |     |
|                                             | [FIZMU2_W01] has an extended knowledge of general physics and an advanced knowledge of a selected area of physics; knows the history of the development of physics and its importance for the progress of science and natural sciences, world cognition and social development |                                                          | not applicable                          |                                     | [SW3] text preparation/written work            |            |     |

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|----------------------------------------------------------------|--------------------------|-------------------|-------------------------------|
| Subject contents                                               | not applicable           |                   |                               |
| Prerequisites and co-requisites                                | not applicable           |                   |                               |
| Assessment methods and criteria                                | Subject passing criteria | Passing threshold | Percentage of the final grade |
|                                                                | not applicable           | 51.0%             | 100.0%                        |
| Recommended reading                                            | Basic literature         | not applicable    |                               |
|                                                                | Supplementary literature | not applicable    |                               |
|                                                                | eResources addresses     |                   |                               |
| Example issues/<br>example questions/<br>tasks being completed | not applicable           |                   |                               |
| Work placement                                                 | Not applicable           |                   |                               |

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