

## Subject card

|                                             |                                                                                                                                                                                                                         |                                                          |                                         |                                     |                                                                                                                                   |            |     |
|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|-----------------------------------------|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|------------|-----|
| Subject name and code                       | Numerical methods for bioinformatics, PG_00156237                                                                                                                                                                       |                                                          |                                         |                                     |                                                                                                                                   |            |     |
| Field of study                              | Bioinformatics                                                                                                                                                                                                          |                                                          |                                         |                                     |                                                                                                                                   |            |     |
| Date of commencement of studies             | October 2024                                                                                                                                                                                                            |                                                          | Academic year of realisation of subject |                                     | 2025/2026                                                                                                                         |            |     |
| Education level                             | Bachelor'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                               | 2                                                                                                                                                                                                                       |                                                          | Language of instruction                 |                                     | Polish                                                                                                                            |            |     |
| Semester of study                           | 3                                                                                                                                                                                                                       |                                                          | ECTS credits                            |                                     | 6.0                                                                                                                               |            |     |
| Learning profile                            | academic                                                                                                                                                                                                                |                                                          | Assessment form                         |                                     | credit                                                                                                                            |            |     |
| Conducting unit                             | Institute of Theoretical Physics and Astrophysics -> Faculty of Mathematics, Physics and Informatics -> Rector                                                                                                          |                                                          |                                         |                                     |                                                                                                                                   |            |     |
| Name and surname of lecturer (lecturers)    | Subject supervisor                                                                                                                                                                                                      |                                                          | dr hab. Wiesław Miklaszewski            |                                     |                                                                                                                                   |            |     |
|                                             | Teachers                                                                                                                                                                                                                |                                                          | mgr Rafał Grochowski                    |                                     |                                                                                                                                   |            |     |
|                                             |                                                                                                                                                                                                                         |                                                          | dr hab. Wiesław Miklaszewski            |                                     |                                                                                                                                   |            |     |
| Lesson types                                | Lesson type                                                                                                                                                                                                             | Lecture                                                  | Tutorial                                | Laboratory                          | Project                                                                                                                           | Seminar    | SUM |
|                                             | Number of study hours                                                                                                                                                                                                   | 15.0                                                     | 0.0                                     | 45.0                                | 0.0                                                                                                                               | 0.0        | 60  |
|                                             | 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                                                                                                                                                                                                   | 60                                                       |                                         | 0.0                                 |                                                                                                                                   | 90.0       | 150 |
| Subject objectives                          | n                                                                                                                                                                                                                       |                                                          |                                         |                                     |                                                                                                                                   |            |     |
| Learning outcomes                           | Course outcome                                                                                                                                                                                                          |                                                          | Subject outcome                         |                                     | Method of verification                                                                                                            |            |     |
|                                             | [BIOINL3_U04] Graduate effectively plans and organizes work independently or as part of a team                                                                                                                          |                                                          | n                                       |                                     | [SU1] oral statement/conversation/discussion<br>[SU2] presentation/project/paper/report<br>[SU5] implementation of a problem task |            |     |
|                                             | [BIOINL3_W03] Has sufficient knowledge of mathematical and statistical methods in order to describe and model biological phenomena and processes                                                                        |                                                          | n                                       |                                     | [SW3] text preparation/written work                                                                                               |            |     |
|                                             | [BIOINL3_U03] Graduate applies fundamental mathematical and statistical methods to describe phenomena and analyze data; has the ability to perform basic data analysis in professional databases used in bioinformatics |                                                          | n                                       |                                     | [SU1] oral statement/conversation/discussion<br>[SU3] text preparation/written work<br>[SU5] implementation of a problem task     |            |     |
| Subject contents                            | n                                                                                                                                                                                                                       |                                                          |                                         |                                     |                                                                                                                                   |            |     |
| Prerequisites and co-requisites             | n                                                                                                                                                                                                                       |                                                          |                                         |                                     |                                                                                                                                   |            |     |
| Assessment methods and criteria             | Subject passing criteria                                                                                                                                                                                                |                                                          | Passing threshold                       |                                     | Percentage of the final grade                                                                                                     |            |     |
|                                             | project                                                                                                                                                                                                                 |                                                          | 51.0%                                   |                                     | 80.0%                                                                                                                             |            |     |
|                                             | test                                                                                                                                                                                                                    |                                                          | 51.0%                                   |                                     | 20.0%                                                                                                                             |            |     |

|                                                                |                          |   |
|----------------------------------------------------------------|--------------------------|---|
| Recommended reading                                            | Basic literature         | n |
|                                                                | Supplementary literature | n |
|                                                                | eResources addresses     |   |
| Example issues/<br>example questions/<br>tasks being completed | n                        |   |
| Work placement                                                 | Not applicable           |   |

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