

## Subject card

|                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                          |                                                                                                                                                                |                                     |                                                                                                                             |            |     |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|------------|-----|
| Subject name and code                       | Introduction to biochemistry, PG_00147020                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                          |                                                                                                                                                                |                                     |                                                                                                                             |            |     |
| Field of study                              | Genetics and Experimental Biology                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                          |                                                                                                                                                                |                                     |                                                                                                                             |            |     |
| Date of commencement of studies             | October 2025                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                          | Academic year of realisation of subject                                                                                                                        |                                     | 2026/2027                                                                                                                   |            |     |
| Education level                             | Bachelor's studies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                          | Subject group                                                                                                                                                  |                                     | Obligatory subject group in the field of study<br>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                               | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                          | Language of instruction                                                                                                                                        |                                     | Polish                                                                                                                      |            |     |
| Semester of study                           | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                          | ECTS credits                                                                                                                                                   |                                     | 2.0                                                                                                                         |            |     |
| Learning profile                            | academic                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                          | Assessment form                                                                                                                                                |                                     | credit                                                                                                                      |            |     |
| Conducting unit                             | Department of General and Medical Biochemistry -> Faculty of Biology -> Rector                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                          |                                                                                                                                                                |                                     |                                                                                                                             |            |     |
| Name and surname of lecturer (lecturers)    | Subject supervisor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                          | prof. dr hab. Ewa Laskowska                                                                                                                                    |                                     |                                                                                                                             |            |     |
|                                             | Teachers                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                          | prof. dr hab. Ewa Laskowska                                                                                                                                    |                                     |                                                                                                                             |            |     |
| Lesson types                                | Lesson type                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Lecture                                                  | Tutorial                                                                                                                                                       | Laboratory                          | Project                                                                                                                     | Seminar    | SUM |
|                                             | Number of study hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0.0                                                      | 30.0                                                                                                                                                           | 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                                                       |                                                                                                                                                                | 4.0                                 |                                                                                                                             | 16.0       | 50  |
| Subject objectives                          | The aim of the recitation is to expand students' knowledge of topics discussed during the "Introduction to Biochemistry" lectures, with particular emphasis on the regulation of metabolic pathways, lipid and amino acid metabolism.                                                                                                                                                                                                                                                               |                                                          |                                                                                                                                                                |                                     |                                                                                                                             |            |     |
| Learning outcomes                           | Course outcome                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                          | Subject outcome                                                                                                                                                |                                     | Method of verification                                                                                                      |            |     |
|                                             | [GBEL3_U09] Plan and pursue one's education autonomously and in a focused manner.                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                          | Is able to learn in an independent and directed way.                                                                                                           |                                     | [SU1] oral statement/conversation/discussion<br>[SU4] test/exam - oral or written<br>[SU5] implementation of a problem task |            |     |
|                                             | [GBEL3_W01] Understanding the structure and properties of basic types of biological macromolecules, molecular mechanisms of metabolic pathways and genetic information flow, as well as sources of genetic variability in organisms and mechanisms of evolution; explaining the rules of inheritance, elucidating differences in the structure and functioning of prokaryotic and eukaryotic cells, and understanding the structure and functional relationships at the cellular and tissue levels. |                                                          | Describes the structure and properties of basic types of biological macromolecules and basic metabolic pathways.                                               |                                     | [SW4] test/exam - oral or written<br>[SW1] oral statement/conversation/discussion<br>[SW5] implementation of a problem task |            |     |
|                                             | [GBEL3_U01] Independently perform practical tasks in the field of biological sciences and related disciplines, formulate research problems, analyze their results, and draw conclusions.                                                                                                                                                                                                                                                                                                            |                                                          | Is able to independently perform practical tasks in the field of biological sciences, formulate research problems, analyze their results and draw conclusions. |                                     | [SU1] oral statement/conversation/discussion<br>[SU4] test/exam - oral or written                                           |            |     |

|                                                                |                                                                                                                                                                                                                                                                       |                                                                 |                               |
|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|-------------------------------|
| Subject contents                                               | Structure and function of macromolecules (proteins, nucleic acids, carbohydrates, lipids); liver metabolism; acid-base disorders.                                                                                                                                     |                                                                 |                               |
| Prerequisites and co-requisites                                | Knowledge of the structure of basic inorganic and organic compounds, chemical bonds, mechanisms of basic chemical reactions, energetics of chemical reactions, hydrophobic interactions, acids and bases, pH, units of measurement, concentration units of solutions. |                                                                 |                               |
| Assessment methods and criteria                                | Subject passing criteria                                                                                                                                                                                                                                              | Passing threshold                                               | Percentage of the final grade |
|                                                                | Test                                                                                                                                                                                                                                                                  | 51.0%                                                           | 40.0%                         |
|                                                                | Students involvement in the discussion                                                                                                                                                                                                                                | 0.0%                                                            | 30.0%                         |
|                                                                | Problem tasks solving                                                                                                                                                                                                                                                 | 0.0%                                                            | 30.0%                         |
| Recommended reading                                            | Basic literature                                                                                                                                                                                                                                                      | Berg J. M., Tymoczko J. L., Stryer L. Biochemistry. Freeman WH. |                               |
|                                                                | Supplementary literature                                                                                                                                                                                                                                              | Publications selected by the lecturer                           |                               |
|                                                                | eResources addresses                                                                                                                                                                                                                                                  |                                                                 |                               |
| Example issues/<br>example questions/<br>tasks being completed |                                                                                                                                                                                                                                                                       |                                                                 |                               |
| Work placement                                                 | Not applicable                                                                                                                                                                                                                                                        |                                                                 |                               |

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