

## Subject card

|                                             |                                                                                                                                                                                                                                                                                                     |                                                          |                                         |                                     |                                                |            |     |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|-----------------------------------------|-------------------------------------|------------------------------------------------|------------|-----|
| Subject name and code                       | Organic chemistry, PG_00207396                                                                                                                                                                                                                                                                      |                                                          |                                         |                                     |                                                |            |     |
| Field of study                              | Biology                                                                                                                                                                                                                                                                                             |                                                          |                                         |                                     |                                                |            |     |
| Date of commencement of studies             | October 2026                                                                                                                                                                                                                                                                                        |                                                          | Academic year of realisation of subject |                                     | 2026/2027                                      |            |     |
| 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                               | 1                                                                                                                                                                                                                                                                                                   |                                                          | Language of instruction                 |                                     | Polish                                         |            |     |
| Semester of study                           | 2                                                                                                                                                                                                                                                                                                   |                                                          | ECTS credits                            |                                     | 3.0                                            |            |     |
| Learning profile                            | academic                                                                                                                                                                                                                                                                                            |                                                          | Assessment form                         |                                     | credit                                         |            |     |
| Conducting unit                             | Laboratory of Carbohydrate Chemistry -> Department of Organic Chemistry -> Faculty of Chemistry -> Rector                                                                                                                                                                                           |                                                          |                                         |                                     |                                                |            |     |
| Name and surname of lecturer (lecturers)    | Subject supervisor                                                                                                                                                                                                                                                                                  |                                                          | dr hab. Janusz Madaj, prof. UG          |                                     |                                                |            |     |
|                                             | Teachers                                                                                                                                                                                                                                                                                            |                                                          |                                         |                                     |                                                |            |     |
| Lesson types                                | Lesson type                                                                                                                                                                                                                                                                                         | Lecture                                                  | Tutorial                                | Laboratory                          | Project                                        | Seminar    | SUM |
|                                             | Number of study hours                                                                                                                                                                                                                                                                               | 0.0                                                      | 0.0                                     | 30.0                                | 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                                 |                                                | 41.0       | 75  |
| Subject objectives                          | presenting students with basic issues regarding organic chemistry<br>familiarizing students with the basic types of organic compounds and their basic biological role<br>introducing students to the basics of spectroscopy<br>learning the basics of independently conducting chemical experiments |                                                          |                                         |                                     |                                                |            |     |

|                                                                |                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |
|----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| Learning outcomes                                              | Course outcome                                                                                                                                                                                                                                                                                                          | Subject outcome                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Method of verification        |
|                                                                | [BIOLL3_W08] knows the principles of occupational health and safety, intellectual property protection and the basics of copyright law                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |
|                                                                | [BIOLL3_W04] knows and understands at an advanced level the experimental methods and techniques used in biological sciences, as well as the principles of evaluation and analysis of natural processes and phenomena using physical and chemical measurements and IT tools for data processing and interpretation       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |
|                                                                | [BIOLL3_U07] is able to present and justify her/his adopted position, using appropriate scientific argumentation, adapted to various audiences, and take part in discussions or debates                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |
|                                                                | [BIOLL3_U02] is able to use statistical methods, IT tools and data analysis techniques to describe biological phenomena, as well as synthesize information from various sources and formulate correct conclusions based on them                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |
|                                                                | [BIOLL3_U01] is able to use basic research techniques and tools appropriate for the biological sciences and perform physical, chemical and biological observations and measurements in the laboratory and in the field, individually and in a team, while organizing her/his work appropriately and in a maintained way |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |
|                                                                | [BIOLL3_K02] is ready to take care for her/his own safety and that of others, identifying threats and taking appropriate action, as well as use verified equipment and materials responsibly, ensuring their proper use                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |
| Subject contents                                               | Topics of laboratory exercises: basics of laboratory work, performing several exercises/experiments thematically related to the above-mentioned lecture program.                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |
| Prerequisites and co-requisites                                | Basic knowledge of general and analytical chemistry                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |
| Assessment methods and criteria                                | Subject passing criteria                                                                                                                                                                                                                                                                                                | Passing threshold                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Percentage of the final grade |
|                                                                | conducting planned chemical experiments                                                                                                                                                                                                                                                                                 | 51.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 100.0%                        |
| Recommended reading                                            | Basic literature                                                                                                                                                                                                                                                                                                        | Organic Chemistry, 4th Edition, Paula Yurkanis Bruice<br>Organic Chemistry, 5th Edition, L. G. Wade<br>General, Organic, and Biological Chemistry, 5th Edition, H. Stephen Stoker<br>Morrison R., Boyd R. 1999. Chemia organiczna. PWN, Warszawa.<br>McMurry John, Chemia organiczna, Wydawnictwo Naukowe PWN<br>Kupryszewski G., Sobocińska M., Walczyna R. 1988. Podstawy preparatyki związków organicznych. Wyd. Gdańskie, Gdańsk.<br>Walczyna R., Sokołowski J., Kupryszewski G. 1996. Analiza związków organicznych. Wyd. UG, Gdańsk |                               |
|                                                                | Supplementary literature                                                                                                                                                                                                                                                                                                | non                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                               |
|                                                                | eResources addresses                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |
| Example issues/<br>example questions/<br>tasks being completed | Consistent with the content of classes.                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |
| Work placement                                                 | Not applicable                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |