

## Subject card

|                                             |                                                                                                                                                                                                                                                                                                     |                                                          |                                         |                                     |                                                |            |     |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|-----------------------------------------|-------------------------------------|------------------------------------------------|------------|-----|
| Subject name and code                       | Organic chemistry, PG_00154392                                                                                                                                                                                                                                                                      |                                                          |                                         |                                     |                                                |            |     |
| Field of study                              | Biology                                                                                                                                                                                                                                                                                             |                                                          |                                         |                                     |                                                |            |     |
| Date of commencement of studies             | October 2024                                                                                                                                                                                                                                                                                        |                                                          | Academic year of realisation of subject |                                     | 2024/2025                                      |            |     |
| Education level                             | undergraduate 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>polish                               |            |     |
| Semester of study                           | 2                                                                                                                                                                                                                                                                                                   |                                                          | ECTS credits                            |                                     | 3.0                                            |            |     |
| Learning profile                            | academic                                                                                                                                                                                                                                                                                            |                                                          | Assessment form                         |                                     |                                                |            |     |
| Conducting unit                             | Pracownia Chemii Cukrów -> Katedra Chemii Organicznej -> Faculty of Chemistry                                                                                                                                                                                                                       |                                                          |                                         |                                     |                                                |            |     |
| Name and surname of lecturer (lecturers)    | Subject supervisor                                                                                                                                                                                                                                                                                  |                                                          | dr hab. Janusz Madaj                    |                                     |                                                |            |     |
|                                             | 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                                                       |                                         | 6.0                                 |                                                | 39.0       | 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_W17] The graduate is familiar with the principles of safety and hygiene at work and with the principles of savoir-vivre in social and professional life                  | written works, final tests (the student knows laboratory techniques and the principles of using research equipment and the basics of its operation)                                                                                                                                                                                                                                                                     | [SW5] implementation of a problem task |
|                                 | [BIOLL3_U01] The graduate will be able to use basic apparatus and research tools and follow the correct sequence of operations in laboratory and field work                      | final tests, conducting an experiment, report on laboratory tests (the student is able to carry out experiments related to the synthesis of organic compounds, correctly selecting experimental techniques and equipment, correctly documenting the results of his work using the current nomenclature, can apply knowledge acquired outside classes and exercise instructions to plan subsequent exercises experiments | [SU5] implementation of a problem task |
|                                 | [BIOLL3_U13] The graduate is able to present their own ideas and use adequate argumentation in the context of selected theoretical and practical perspectives                    | final tests, conducting an experiment, report on laboratory tests (the student is able to carry out experiments related to the synthesis of organic compounds, correctly selecting experimental techniques and equipment, correctly documenting the results of his work using the current nomenclature, can apply knowledge acquired outside classes and exercise instructions to plan subsequent exercises experiments | [SU5] implementation of a problem task |
|                                 | [BIOLL3_U05] The graduate will be able to synthesise data from a variety of sources and draw appropriate conclusions                                                             | final tests, conducting an experiment, report on laboratory tests (the student is able to carry out experiments related to the synthesis of organic compounds, correctly selecting experimental techniques and equipment, correctly documenting the results of his work using the current nomenclature, can apply knowledge acquired outside classes and exercise instructions to plan subsequent exercises experiments | [SU5] implementation of a problem task |
|                                 | [BIOLL3_W09] The graduate knows the most important laws and rules of physics and chemistry underlying biological processes and the properties of chemical elements and compounds | written works, final tests (the student knows laboratory techniques and the principles of using research equipment and the basics of its operation)                                                                                                                                                                                                                                                                     | [SW5] implementation of a problem task |
|                                 | [BIOLL3_W13] The graduate knows and understands the principles of evaluating processes and phenomena using physical and/or chemical measurements                                 | written works, final tests (the student knows laboratory techniques and the principles of using research equipment and the basics of its operation)                                                                                                                                                                                                                                                                     | [SW5] implementation of a problem task |
|                                 | [BIOLL3_K05] The graduate is prepared to take responsibility for their own and others' safety at work and to recognise risk situations and take appropriate action               | observation and assessment of the student's skills (the student is able to correctly select the level of tasks in the context of his/her skills, perfectly organizes and manages group work, perfectly organizes the workstation, observing the sequence of procedures performed)                                                                                                                                       | [SK5] implementation of a problem task |
| 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%                                 |

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|----------------------------------------------------------------|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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                    | Adresy na platformie eNauczanie:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Example issues/<br>example questions/<br>tasks being completed | Consistent with the content of classes. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Work placement                                                 | Not applicable                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

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