

## Subject card

|                                             |                                                                                                                                                                                                                                                                                                     |                                                          |                                                                                                                                                  |                                     |                                                |            |     |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|------------------------------------------------|------------|-----|
| Subject name and code                       | Organic chemistry, PG_00154234                                                                                                                                                                                                                                                                      |                                                          |                                                                                                                                                  |                                     |                                                |            |     |
| Field of study                              | Medical Biology                                                                                                                                                                                                                                                                                     |                                                          |                                                                                                                                                  |                                     |                                                |            |     |
| Date of commencement of studies             | October 2025                                                                                                                                                                                                                                                                                        |                                                          | 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                               | 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                                                                                                                             |                                     |                                                |            |     |
|                                             | Teachers                                                                                                                                                                                                                                                                                            |                                                          | dr Agnieszka Kowalczyk<br><br>prof. dr hab. Adam Prahł<br><br>mgr Grzegorz Detlaff<br><br>dr Przemysław Karpowicz<br><br>dr hab. Andrzej Nowacki |                                     |                                                |            |     |
| 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                 |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
|                   | [BIOLMEDL3_W18] knows the basic principles of occupational health and safety and ergonomics                                                                                                                                                          | 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 |
|                   | [BIOLMEDL3_U01] uses basic apparatus and research tools and, maintaining the correct sequence of operations, performs simple physical, biological or chemical observations and measurements in laboratory work in the biological or medical sciences | 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 |
|                   | [BIOLMEDL3_U05] synthesises data from different sources and draws appropriate conclusions from them                                                                                                                                                  | 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 |
|                   | [BIOLMEDL3_U12] has the ability to present his own ideas and adequate argumentation in the context of selected theoretical and practical perspectives of medical biology                                                                             | 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 |
|                   | [BIOLMEDL3_K01] understands the need for lifelong learning and to update his/her knowledge of medical biology and related disciplines                                                                                                                | 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 own skills, perfectly organizes and manages group work, perfectly organizes the workstation, following the sequence of procedures performed)                                                                                                                                    | [SK5] implementation of a problem task |
|                   | [BIOLMEDL3_K03] is aware of his/her own limitations and knows when to seek expert assistance                                                                                                                                                         | 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 own skills, perfectly organizes and manages group work, perfectly organizes the workstation, following the sequence of procedures performed)                                                                                                                                    | [SK5] implementation of a problem task |
|                   | [BIOLMEDL3_W15] describes the principles of evaluating processes and phenomena occurring in a living organism, using physical 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 |
|                   | [BIOLMEDL3_W10] understands and describes the physicochemical and biological basis of health sciences                                                                                                                                                | 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 |
|                   | [BIOLMEDL3_W09] identifies the tools of mathematics necessary to understand the laws of nature and to describe the processes of 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 |

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|                                                                | Course outcome                                                                                                                                                  | Subject outcome                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Method of verification                 |
|                                                                | [BIOLMEDL3_K05] jest odpowiedzialny za bezpieczeństwo pracy własnej i innych oraz potrafi rozpoznać sytuacje zagrożenia i podjąć odpowiednie działania          | 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 own skills, perfectly organizes and manages group work, perfectly organizes the workstation, following the sequence of procedures performed)                                                                                                                                                                                                                                                      | [SK5] implementation of a problem task |
| Subject contents                                               | Issues 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                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                        |

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