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| <b>Course title</b><br>Chemia bioorganiczna/ Bioorganic chemistry  |             | <b>ECTS code</b><br>13.3.0385  |  |
| <b>Name of unit administrating study</b><br>Faculty of Chemistry   |             |  |  |
| <b>Studies</b>   |             |  |  |
| <b>Field of study</b>  | <b>Type</b> | <b>Form</b>  |  |
| Chemistry  | Master      | Full-time studies  |  |
| <b>Teaching staff</b><br>Dr hab. Anna Łęgowska, prof. UG   |             |  |  |
| <b>Forms of classes, the realization and number of hours</b>   |             | <b>ECTS credits</b> 2  |  |
| <b>A. Forms of classes, in accordance with the UG Rector's regulations</b><br>Lecture  |             | classes 15 h<br>tutorial classes 5 h<br>student's own work 30 h<br>TOTAL: 50 h - 2 ECTS  |  |
| <b>B. The realization of activities</b><br>Classes in the lecture hall   |             |  |  |
| <b>C. Number of hours</b><br>15 hours  |             |  |  |
| <b>The academic cycle</b><br>2019/2020 winter semester   |             |  |  |
| <b>Type of course</b><br>obligatory  |             | <b>Language of instruction</b><br>Polish   |  |
| <b>Teaching methods</b><br><br>Lecture with multimedia presentation  |             | <b>Form and method of assessment and basic criteria for evaluation or examination requirements</b>   |  |
|  |             | <b>A. Final evaluation, in accordance with the UG study regulations</b><br>Exam  |  |
|  |             | <b>B. Assessment methods</b><br>Written exam with open questions   |  |
|  |             | <b>C. The basic criteria for evaluation</b> or exam requirements<br><br>- positive grade received in written exam composed of 4 – 6 open questions covering issues listed in the course contents; answers to these questions will require solving tasks specified in educational outcomes; the grade scale will be adjusted to the total number of points that could be obtained in the exam<br><br>- negative grade should be improved at repeat exam;<br><br>The applied grading criteria will be in accordance with UG study regulations. |  |
| <b>Required courses and introductory requirements</b><br>Organic chemistry (bachelor level)<br>Basic knowledge in organic chemistry and biochemistry |             |  |  |
| <b>Aims of education</b><br>- to acquaint students with all issues mentioned in the lecture contents;  |             |  |  |

- to introduce students to fundamental groups of naturally occurring organic compounds and to present their structure and biological activity

#### Course contents

Structure and biological functions of selected groups of naturally occurring organic compounds – alkaloids, steroids, and vitamins. Natural non-proteinogenic amino acids. Plant and animal toxins. Peptide antibiotics. Non-ribosomal peptide synthesis.

#### Bibliography of literature

##### A. Literature required to pass the course

A.1. for classes preparation

A. Kołodziejczyk „Naturalne związki organiczne”

Piotr Moszczyński, Rita Pyć „Biochemia witamin”

A.2. for individual studying

I.T. Timbrell – Paradoxs trucizn

##### B. Extracurricular readings

organic chemistry academic textbooks

#### Knowledge

1. Defines and describes chemical structures of alkaloids, steroids, and vitamins,
2. Describes the biological activity of naturally occurring compounds,
3. Identifies non-proteinogenic amino acids, including antimetabolites,
4. Understands the role of naturally occurring compounds in processes taking place in living organisms,
5. Explains the definition of peptide antibiotics and toxins,
6. Gives examples of biosynthesis of short peptides containing non-proteinogenic amino acids

#### Skills

1. Uses chemical terminology necessary to present the content of the course;
2. Can predict physicochemical and biological properties of organic compounds based on their chemical structure and spatial structure;
3. Understands the role of naturally occurring compounds in processes taking place in living organisms;
4. Can search for information in specialist literature;

#### Social competence

1. Understands the need for continuous education;
2. Shows cautious criticism when acquiring knowledge, especially information coming from mass media;
3. Is aware of the necessity of fair and reliable work;
4. Can look at individual work with criticism