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| **Course title**Biochemistry – ERASMUSBiochemia – ERASMUS  | **ECTS code**13.3.1254 |
| **Name of unit administrating study** Faculty Chemistry |
| **Studies**

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| **Field of study** | **Type** | **Form** |  |
| Chemistry | Bachelor  | Full-time studies  |  |
| Chemistry | Master  | Full-time studies  |  |
| Environmental sciences | Bachelor  | Full-time studies  |  |

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| **Teaching staff**dr hab. Dawid Dębowski |
| **Forms of classes, the realization and number of hours**  | **ECTS credits 4**classes 30 htutorial classes 20 hstudent’s own work 50 hTOTAL: 100 h - 4 ECTS |
| 1. **Forms of classes, in accordance with the UG Rector’s regulations**

laboratory classes |
| 1. **The realization of activities**

In-class |
| 1. **Number of hours**

30 h - laboratory |
| **The academic cycle**summer |
| **Type of course**facultative | **Language of instruction**English |
| **Teaching methods**Laboratory experiments | **Form and method of assessment and basic criteria for evaluation or examination requirements**  |
| **A. Final evaluation, in accordance with the UG study regulations** course completion (with a grade) |
| **B. Assessment methods**Writing test  |
| **C. The basic criteria for evaluation** or exam requirements Evaluation criteria in accordance with the UG Studies Regulations; |
| **Required courses and introductory requirements** no requirements |
| **Aims of education**to acquaint students with all issues mentioned in the lecture contents;to introduce students to the basic endogenous organic compounds, their structure and functions;to acquaint students with basic metabolic pathways and relations between them;to teach students how to perform biochemical experiments using delivered instructions;to develop the ability to critically asses and interpret obtained experimental results and analysis of scientific sources |
| **Course contents**Chemical structure, physicochemical properties and biological functions of peptides, proteins, nucleic acids,phospholipids, mono- and polysaccharides.The laboratory: completion of five experiments with the following topics: determination of activity of serine proteinases and their inhibitors using chromogenic substrates, determination of kinetic parameters of select-ed chromogenic substrate, separation of proteins by size-exclusion chromatography, phospholipid analysis by thin layer chromatography, determination of polysaccharides susceptibility to hydrolysis in low pH |
| **Bibliography of literature** Monographic works provided by assistants leading classesVarious academic handbooks concerning biochemistry |
| **Knowledge**1. Defines and demonstrates chemical structure of basic groups of bio- and macromolecules;2. Describes and illustrates main metabolic pathways using chemical reactions, explains theirimportance for the body functioning;3. Characterizes basic analytical methods of endogenous, organic compounds;4. Characterizes methods of determination of enzymatic activity of selected proteases;5. Recognizes basic laboratory equipment;6. Understands influence of diet on physical condition of the body; |
| **Skills**1. Uses chemical terminology necessary to present (both in oral and written form) the content presented in the course;2. Has the ability to predict the course and products of metabolic pathways ;3. Predicts physicochemical and biological properties of organic compounds based on their chemical formulas;4. Uses the basic analytical techniques applied for the analysis of endogenous organic compounds;5. Designs and performs simple biochemical experiments, using appropriate laboratory equipment;6. Analyzes the results of performed experiments, draws conclusions about the correctness of their course |
| **Social competence**1. Understands the need of continuous education;2. Takes care of laboratory equipment;3. Carefully uses laboratory equipment and works cautiously with chemicals;4. Appreciates the need of ability to team work according to assigned role (team leader/team member);5. Is aware of the need of critical analysis of own work;6. Shows cautious criticism when acquiring knowledge, especially these coming from mass media;7. Is aware of the necessity of fair and reliable work; |