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| **Course title**  Biochemistry – ERASMUS  Biochemia – ERASMUS | | | **ECTS code**  13.3.1254 |
| **Name of unit administrating study**  Faculty Chemistry | | | |
| **Studies**   |  |  |  |  | | --- | --- | --- | --- | | **Field of study** | **Type** | **Form** |  | | Chemistry | Bachelor | Full-time studies |  | | Chemistry | Master | Full-time studies |  | | Environmental sciences | Bachelor | Full-time studies |  | | | | |
| **Teaching staff**  dr hab. Dawid Dębowski | | | |
| **Forms of classes, the realization and number of hours** | | **ECTS credits 4**  classes 30 h  tutorial classes 20 h  student’s own work 50 h  TOTAL: 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 classes  Various 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 their  importance 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; | | | |