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| **Course title**  Biologically active peptides – ERASMUS  Biologicznie czynne peptydy – ERASMUS | | | **ECTS code**  13.3.1256 |
| **Name of unit administrating study**  Faculty Chemistry | | | |
| **Studies**   |  |  |  |  | | --- | --- | --- | --- | | **Field of study** | **Type** | **Form** |  | | Chemistry | Bachelor | Full-time studies |  | | Chemistry | Master | Full-time studies |  | | | | |
| **Teaching staff**  prof. dr hab. Krzysztof Rolka | | | |
| **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**   lecture | |
| 1. **The realization of activities**   In-class or on-line | |
| 1. **Number of hours**   30 h - lecture | |
| **The academic cycle**  summer | | | |
| **Type of course**  facultative | **Language of instruction**  English | | |
| **Teaching methods**  Lecture with multimedia presentation | **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**  Familiarizing students with all issues listed in the seminar program content  **Convergent to**: organic chemistry, biochemistry | | | |
| **Course contents**  Peptide bond geometry, angles of polypeptide chains. Canonical structures secondary and higher order structures. Application of combinatorial chemistry methods to select peptides with assumed activity biological (design, chemical synthesis and deconvolution of peptide libraries). Peptide and protein hormones. Plant peptides. Peptides with antibacterial and antifungal properties. Anticancer peptides. Peptide vaccines. Peptides with action immunological. Peptides isolated from the venoms of various animal species and peptide toxins. Opioid peptides. Perspectives  the use of peptides in medical therapy and diagnostics. Study of the relationship between the structure and activity of biologically active peptides. Physicochemical methods for determining the spatial structures of peptides | | | |
| **Bibliography of literature**  Handbook of biologically active peptides (A.J. Kerstin, red.) Elsevier 2006,M.  N. Sewald, H. Jakubke, “Peptides: chemistry and biology”, Wiley-VCH Verlag | | | |
| **Knowledge**  1. defines the spatial structure of the peptides and proteins  2. characterizes endogenous peptides and describes their importance for functioning microorganisms, plants and animals  3. lists examples of peptide drugs  4. describes selected methods of analysis of endogenous organic compounds  5. characterizes the methods of studying the structure-activity relationship  6. characterizes the main methods of combinatorial chemistry | | | |
| **Skills**  1. follows established research procedures | | | |
| **Social competence**  1. understands the need for continuous education  2. is aware of the importance of peptides and their derivatives in the functioning the body.  3. is cautious about accepting information, especially available information in the mass media  4. is aware of the need for honest and reliable work | | | |