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| FACULTY: | **Faculty of Mechanical and Energy Engineering**  Department of Biomedical Engineering |
| FIELD OF STUDY: | **Biomedical Engineering** |
| ERASMUS COORDINATOR OF THE FACULTY: | Igor Maciejewski, DSc, PhD |
| E-MAIL ADDRESS OF THE COORDINATOR: | igor.maciejewski@tu.koszalin.pl |
| COURSE TITLE: | **Techniques for manufacturing polymer biomaterials** |
| LECTURER’S NAME: | Tomasz Rydzkowski, DSc, PhD |
| E-MAIL ADDRESS OF THE LECTURER: | tomasz.rydzkowski@tu.koszalin.pl |
| ECTS POINTS FOR THE COURSE: | 2 |
| ACADEMIC YEAR: | 2024/2025 |
| SEMESTER: (W – winter, S – summer) | S |
| HOURS IN SEMESTER: | 30 |
| LEVEL OF THE COURSE:  (1st cycle, 2nd cycle, 3rd cycle) | 1st cycle |
| TEACHING METHOD:  (lecture, laboratory, group tutorials, seminar, other-what type?) | Lecture (15h) + Laboratory (15h) |
| LANGUAGE OF INSTRUCTION: | * **English full time scheme for classes with 5 and more International Erasmus+ students enrolled/accepted;** * **English 50% individually with the teacher + Polish 50% with Polish students or individual project work- scheme for classes with less than 5 International Erasmus+ students enrolled/ accepted;** |
| ASSESSMENT METOD:  (written exam, oral exam, class test, written reports, project work, presentation, continuous assessment, other – what type?) | Class test, reports |
| COURSE CONTENT: | To familiarize students with the selected topics in techniques for manufacturing polymer biomaterials. In particular contents related to:   * Polymer chain structure. From linear to dendritic polymers. * Physical properties of polymers. Amorphous and partially crystalline polymers. * Polymers in medicine - historical outline. * Polymer materials as biomaterials - areas of application. * Demand for regenerative medicine - implants. * Scaffold substrates - biodegradable and non-biodegradable. * Controlled drug release systems - intelligent hydrogels. * Polymer materials in medical diagnostics - artificial receptors. |
| ADDITIONAL INFORMATION: | Student should have knowledge of chemistry, materials science and biology at the basic level.  Code: 0911>1005-TWBP |