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| FACULTY: | **Faculty of Mechanical 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: | **Diagnostics of biomaterials** |
| LECTURER’S NAME: | Ewa Dobruchowska, Ph. D. Eng. |
| E-MAIL ADDRESS OF THE LECTURER: | ewa.dobruchowska@tu.koszalin.pl |
| ECTS POINTS FOR THE COURSE: | 1 |
| ACADEMIC YEAR: | 2021/2022 |
| SEMESTER:  (W – winter, S – summer) | W |
| HOURS IN SEMESTER: | 15 |
| LEVEL OF THE COURSE:  (1st cycle, 2nd cycle, 3rd cycle) | 1st cycle |
| TEACHING METHOD:  (lecture, laboratory, group tutorials, seminar, other-what type?) | Laboratory (15h) |
| LANGUAGE OF INSTRUCTION: | English |
| ASSESSMENT METOD:  (written exam, oral exam, class test, written reports, project work, presentation, continuous assessment, other – what type?) | reports |
| COURSE CONTENT: | To familiarize students with the selected topics in diagnostics of biomaterials. In particular contents related to:   * Assessment of the ability to osseointegrate metal, ceramic and polymer biomaterials - testing the surface wettability using body fluid simulators. * Assessment of corrosion resistance of biomaterials to orthopedic implants in the short and long term in the environment of body fluid simulators. * Investigation of biomaterial surface structure using SEM. * Chemical composition testing of biomaterials using EDX X-ray microanalysis. * The use of fluorescence microscopy to study organic biomaterials and cellular structures. * Determination of hardness and fracture toughness of ceramic biomaterials. |
| ADDITIONAL INFORMATION: | Students should have knowledge of chemistry, materials science and biology at the basic level. |