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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: | **Additive technologies in medicine** |
| LECTURER’S NAME: | Błażej Bałasz, DSc, PhD |
| E-MAIL ADDRESS OF THE LECTURER: | blazej.balasz@tu.koszalin.pl |
| ECTS POINTS FOR THE COURSE: | 3 |
| ACADEMIC YEAR: | 2024/2025 |
| SEMESTER: (W – winter, S – summer) | W |
| HOURS IN SEMESTER: | 45 |
| LEVEL OF THE COURSE:  (1st cycle, 2nd cycle, 3rd cycle) | 1st cycle |
| TEACHING METHOD:  (lecture, laboratory, group tutorials, seminar, other-what type?) | Lectures and Classes (15h + 30h) |
| 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?) | written exam |
| COURSE CONTENT: | Introduction to the scope and history of the subject.  Overview of existing additive technologies.  An overview of the materials used for 3D printing.  Characteristics and properties of printing powders - polymers, resins.  Characteristics and properties of printing powders - metals and alloys.  Powder diagnostic methods.  Methods for assessing the chemical properties of powders.  Methods for assessing the physical and structural properties of powders.  Discussion of commercially used SLS and SLM technologies.  An overview of the software used to create 3D models. |
| ADDITIONAL INFORMATION: | Basic chemistry, physics, mathematics courses completed. Knowledge of basic issues in physics, chemistry and mathematics describing the state of matter. Basic information on materials science.  Code: 0911>1005-TPwM |