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| FACULTY: | **Faculty of Mechanical and Energy Engineering** |
| FIELD OF STUDY: | **Energetics** |
| ERASMUS COORDINATOR OF THE FACULTY: | Łukasz Bohdal, DSc, PhD |
| E-MAIL ADDRESS OF THE COORDINATOR: | lukasz.bohdal@tu.koszalin.pl |
| COURSE TITLE: | **Numerical methods** |
| LECTURER’S NAME: | Łukasz Bohdal, DSc, PhD |
| E-MAIL ADDRESS OF THE LECTURER: | lukasz.bohdal@tu.koszalin.pl |
| ECTS POINTS FOR THE COURSE: | 3 ECTS |
| COURSE CODE (USOS): | 9S |
| ACADEMIC YEAR: | 2024/2025 |
| SEMESTER: (W – winter, S – summer) | S |
| HOURS IN SEMESTER: | 15 + 15 |
| LEVEL OF THE COURSE:  (1st cycle, 2nd cycle, 3rd cycle) | 1st cycle |
| TEACHING METHOD:  (lecture, laboratory, group tutorials, seminar, other-what type?) | Lecture + project work |
| 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: | The scope of the course includes the following topics:  Basic concepts related to the modeling of physical phenomena using numerical methods. Building computer models. Linear programming. Nonlinear programming.  Examples of numerical methods: finite element method, meshfree methods. Application of numerical methods (for example: Implicit method, explicit method) in modeling of mechanical end energetic problems (stress state in materials, flow, contact problems, cracking, construction modeling, technological processes: cutting, burnishing ect.) using Finite element method (FEM), meshfree methods and CAD and CAE software. |
| ADDITIONAL INFORMATION: |  |

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