



Subject card

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| Subject name and code | , PG_00060098 | | | | | | |
| Field of study | Civil Engineering | | | | | | |
| Date of commencement of studies | October 2023 | | Academic year of realisation of subject | | 2023/2024 | | |
| Education level | first-cycle studies | | Subject group | | Obligatory subject group in the field of study | | |
| Mode of study | Part-time studies | | Mode of delivery | | at the university | | |
| Year of study | 1 | | Language of instruction | | Polish | | |
| Semester of study | 2 | | ECTS credits | | 3.0 | | |
| Learning profile | general academic profile | | Assessment form | | assessment | | |
| Conducting unit | Structural Mechanics Department -> Faculty of Civil and Environmental Engineering | | | | | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | | dr hab. inż. Andrzej Ambroziak | | | | |
| | Teachers | | dr hab. inż. Andrzej Ambroziak | | | | |
| Lesson types and methods of instruction | Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
| | Number of study hours | 0.0 | 10.0 | 10.0 | 0.0 | 0.0 | 20 |
| | E-learning hours included: 0.0 | | | | | | |
| Learning activity and number of study hours | Learning activity | Participation in didactic classes included in study plan | | Participation in consultation hours | | Self-study | SUM |
| | Number of study hours | 20 | | 0.0 | | 0.0 | 20 |
| Subject objectives | The aim of the course is to discuss the basic numerical methods in structural mechanics (approximation, interpolation, numerical integration) and to acquire skills in programming in the MATLAB language in the field of the discussed numerical methods. | | | | | | |
| Learning outcomes | Course outcome | | Subject outcome | | Method of verification | | |
| | [K6_U04] Reads and prepares construction documentation (including drawings, graphic documentation in the CAD environment), efficiently uses maps as well as architectural, construction and geodetic drawings. | | The student knows and understands basic numerical methods (approximation, interpolation and numerical integration). | | [SU5] Assessment of ability to present the results of task [SU3] Assessment of ability to use knowledge gained from the subject [SU2] Assessment of ability to analyse information [SU1] Assessment of task fulfilment | | |
| | [K6_U05] Conducts research (obtaining information, simulations, experimental methods) in the field of construction in order to solve specific tasks and report research results. | | The student is able to use numerical methods in the context of the basics of computer science. He is also able to analyze the methods themselves and assess their cognitive and practical value. Can choose the right IT tools and use them fluently. | | [SU5] Assessment of ability to present the results of task [SU4] Assessment of ability to use methods and tools | | |
| | [K6_W04] Knows the rules of descriptive geometry and technical drawing for preparing and reading architectural, construction and geodetic drawings; also with the use of CAD | | The student knows the terminology in the field of computer science basics in the field of programming in the MATLAB language. | | [SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge | | |
| | [K6_W05] Demonstrate knowledge and understanding of research methods (obtaining information, simulations, experimental methods) in the field of civil engineering. | | The student is able to use numerical and research methods in the field of information acquisition, simulation and use in experimental research. | | [SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge | | |

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| Subject contents | Discussion of selected numerical methods: approximation, interpolation, numerical integration.Basics of programming in the MATLAB program. | | |
| Prerequisites and co-requisites | mathematics structural mechanics | | |
| Assessment methods and criteria | Subject passing criteria | Passing threshold | Percentage of the final grade |
| | Final test | 50.0% | 50.0% |
| | Final projects | 0.0% | 50.0% |
| Recommended reading | Basic literature | 1. P. Kłosowski, A.AMBROZIAK: Metody numeryczne w mechanice konstrukcji z przykładami w programie Matlab - Gdańsk: Wydawnictwo Politechniki Gdańskiej, 2011 2. R. Jankowski, I. Lubowiecka, W. Witkowski: Podstawy Programowania w języku MATLAB. Wyd. PG Gdańsk 2003. 3. B. Mrozek, Z. Mrozek: MATLAB i Simulink. Poradnik użytkownika, Wyd. III, Helion 12/2010. 4. I. Lubowiecka, A. Ambroziak: MATLAB i jego środowisko, Wyd. PG Gdańsk 2016. | |
| | Supplementary literature | Materials for the laboratory and exercises placed on e-learning. | |
| | eResources addresses | Adresy na platformie eNauczanie: | |
| Example issues/ example questions/ tasks being completed | | | |
| Work placement | Not applicable | | |

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