Subject card

| Subject name and code | Mathematics I, PG_00055649 |  |  |  |  |  |  |
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| Field of study | Architecture |  |  |  |  |  |  |
| Date of commencement of studies | October 2021 |  | Academic year of realisation of subject |  |  | 2021/2022 |  |
| Education level | first-cycle studies |  | Subject group |  |  | Obligatory subject group in the field of study |  |
| Mode of study | Full-time studies |  | Mode of delivery |  |  | at the university |  |
| Year of study | 1 |  | Language of instruction |  |  | English |  |
| Semester of study | 1 |  | ECTS credits |  |  | 4.0 |  |
| Learning profile | general academic profile |  | Assessment form |  |  | assessment |  |
| Conducting unit | Mathematics Center -> Vice-Rector for Education |  |  |  |  |  |  |
| Name and surname of lecturer (lecturers) | Subject supervisor |  | dr inż. Magdalena Łapińska |  |  |  |  |
|  | Teachers |  | dr inż. Magdalena Łapińska |  |  |  |  |
| Lesson types and methods of instruction | Lesson type | Lecture | Tutorial | Laboratory | Projec | Seminar | SUM |
|  | Number of study hours | 15.0 | 30.0 | 0.0 | 0.0 | 0.0 | 45 |
|  | E-learning hours included: 0.0 |  |  |  |  |  |  |
|  | Adresy na platformie eNauczanie: <br> WA - Architektura sem. 1 - Mathematics 1 2020/21 (M.Łapińska) - Moodle ID: 16406 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=16406 |  |  |  |  |  |  |
| 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 | 45 |  | 8.0 |  | 47.0 | 100 |
| Subject objectives | Students obtain competence in the range of using methods of matematical analysis ang linear algebra and knowledge how to solve simple problems that can be found in the field of engineering. |  |  |  |  |  |  |
| Learning outcomes | Course outcome |  | Subject outcome |  |  | Method of verification |  |
|  | [K6_U04] is able to use analytical methods to formulate and solve project tasks |  | Student uses the methods of elementary mathematics, linear algebra, and analytic geometry to formulate and solve simple problems in the area of architecture. Student solves equations and inequalities with elementary functions. Student costructs inverse functions of exponential, logarytmic, trygonometric and cyclometric functions. Student solves exercises involving infinite sequences. |  |  | [SU4] Assessment of ability to use methods and tools |  |
|  | [K6_W01] knows and understands construction problems, building and engineering issues related to building design; principles, solutions, constructions and building materials used in simple engineering tasks in the field of architectural and urban design |  | Student names the basic properties of elementary functions and plots their graphs. Student understands the notion of a continuous function and uses limits of functions to determine continuity. Student analyses problems from analytical three-dimensional geometry. |  |  | [SW1] Assessment of factual knowledge |  |
| Subject contents | 1. Elementary functions <br> 2. Sequences <br> 3. Limit of the function <br> 4. Continuity of a function <br> 5. Elements of linear algebra <br> 6. Analytic geometry in three-dimensional space <br> 7. Conic curves |  |  |  |  |  |  |


| Prerequisites and co-requisites | No requirements. |  |  |
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| Assessment methods and criteria | Subject passing criteria | Passing threshold | Percentage of the final grade |
|  | Midterms | 50.0\% 100.0\% |  |
| Recommended reading | Basic literature |  | entami matematyki wyższej" WPG matematyki" WPG matyki wyższej WPG matematyczna I - Przykłady i |
|  | Supplementary literature | - W.Krysicki, L.Włodarsk W.Stankiewicz "Zadani technicznych I" | a matematyczna w zdaniach I" matyki dla wyższych uczelni |
|  | eResources addresses | WA - Architektura sem. 1 Moodle ID: 16406 https://enauczanie.pg.edu.p | atics 1 2020/21 (M.Łapińska) - <br> e/course/view.php?id=16406 |
| Example issues/ example questions/ tasks being completed | 1. Find the domain and range of the function $f(x)=\ldots$. Determine the inverse function of $f$ <br> 2. Evaluate the limit of the given sequence (an) <br> 3. Evaluate the limit of the given function $\mathrm{f}(\mathrm{x})=$ at the point $\mathrm{x} 0=$ <br> 4. Analyse the continuity of the following function $\mathrm{f}(\mathrm{x})=$ <br> 5. Show that the points $A, B, C, D$ do not lie on the plane. <br> 6. Discuss the relative position of the given lines I and I . |  |  |
| Work placement | Not applicable |  |  |

