Subject card

| Subject name and code | Mathematics, PG_00048601 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Field of study | Chemistry in Construction Engineering |  |  |  |  |  |  |
| 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 |  |  | Polish |  |
| Semester of study | 1 |  | ECTS credits |  |  | 9.0 |  |
| Learning profile | general academic profile |  | Assessment form |  |  | exam |  |
| Conducting unit | Mathematics Center -> Vice-Rector for Education |  |  |  |  |  |  |
| Name and surname of lecturer (lecturers) | Subject supervisor |  | dr Anita Dabrowicz-Tlałka |  |  |  |  |
|  | Teachers |  | dr Anita Dabrowicz-Tlałka |  |  |  |  |
| Lesson types and methods of instruction | Lesson type | Lecture | Tutorial | Laboratory | Projec | Seminar | SUM |
|  | Number of study hours | 30.0 | 30.0 | 0.0 | 0.0 | 0.0 | 60 |
|  | E-learning hours included: 0.0 |  |  |  |  |  |  |
|  | Address on the e-learning platform: https://enauczanie.pg.edu.pl/moodle/course/view.php?id=15537 Adresy na platformie eNauczanie: |  |  |  |  |  |  |
|  | Additional information: <br> The course is informative and supports the achievement of learning outcomes. |  |  |  |  |  |  |
| 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 | 60 |  | 20.0 |  | 145.0 | 225 |
| Subject objectives | Students obtain competence in the range of using methods of mathematical analysis and 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_W01] has a basic knowledge from some branches of mathematics and physics useful for formulating and solving simple problems in the field of environmental technologies and modern analytical methods |  | Student mentions basic properties of elementary functions. Student solves equations and inequalities with elementary functions. Student gives the definition of basic notions of differential calculus. Student uses basic notions and formulas of differential calculus. Student determines intervals of monotonicity of a given functions and its extrema. Students calculates antiderivatives using the substitution method of integration and integration by parts. Student applies definite integrals to solving geometrical problems. Student performs calculations on complex numbers. |  |  | [SW1] Assessment of factual knowledge |  |
|  | K6_U02 |  | Student can choose the appropriate data to solve the task and is able to correctly describe solution of the problem by using charts and logically articulated reasoning. |  |  | [SU2] Assessment of ability to analyse information [SU4] Assessment of ability to use methods and tools |  |



| Example issues/ <br> example questions/ <br> tasks being completed | 1. Find the domain and the set of values of the function $f(x)=\ldots$. Determine the inverse function of $f$. <br> 2. Check the continuity of the following function $f(x)=$ |
| :--- | :--- |
| 3. Find local extremes and intervals of monotonicity of the following function $f(x)=$. |  |
| 4. Evaluate the indefinite integral of the given rational function . |  |
| 5. Give three applications of the definite integral with appropriate rules. |  |
| 6. Compute the improper integral or prove its divergence ... . |  |
| 7. Solve the equation in a set of complex numbers ... . |  |

