

# Information sheet

## ADDITIONAL EXERCISES IN MATHEMATICS I

<b>University:</b>	Slovak University of Technology in Bratislava
<b>Faculty:</b>	Faculty of Mechanical Engineering
<b>Course unit code:</b>	282109_BDP
<b>Course unit title:</b>	Additional Exercises in Mathematics I
<b>Mode of completion and Number of ECTS credits:</b>	Pass credit (1 credit)

### Course contents:

- 1. Algebraic expressions** (lectures: 0, seminars: 2)
  - a) Manipulations with formels
  - b) Powers with rational exponent
- 2. Equations, inequalities and systems of two equations with two unknown** (lectures: 0, seminars: 1)
- 3. Coordinate geometry in the plane** (lectures: 0, seminars: 1)
  - a) Line and conic sections, equations and graphs in the Cartesian coordinate system
- 4. Real function of a real variable** (lectures: 0, seminars: 3)
  - a) Basic elementary functions
  - b) Properties of functions, inverse function
  - c) Exponential, logarithmic, and trigonometric functions
- 5. Differential calculus** (lectures: 0, seminars: 3)
  - a) Derivative of function
  - b) Function behaviour
  - c) Application of methods of differential calculus to investigation of function behaviour
- 6. Integral calculus** (lectures: 0, seminars: 3)
  - a) Evaluation of indefinite and definite integrals (basic integration formulas, Newton-Leibniz formula, method by parts)
  - b) Substitution method for indefinite and definite integrals
  - c) Applications of definite integrals