



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Mathematics [N1Log2>MAT2]

### Course

Field of study

Logistics

Year/Semester

1/2

Area of study (specialization)

–

Profile of study

general academic

Level of study

first-cycle

Course offered in

Polish

Form of study

part-time

Requirements

compulsory

### Number of hours

Lecture

8

Laboratory classes

0

Other

0

Tutorials

18

Projects/seminars

0

### Number of credit points

4,00

### Coordinators

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### Lecturers

### Prerequisites

The basic knowledge obtained in the first semester. The ability to think logically. The ability to describe simple mathematical problems.

### Course objective

The acquisition and consolidation of examples of basic mathematical concepts and acquire the ability to use the mathematical apparatus

### Course-related learning outcomes

Knowledge:

1. Student knows the basic issues of mathematics and statistics in the study of the structure of economic and logistic phenomena [P6S\_WG\_04]

Skills:

1. Student is able to use appropriate experimental and measurement techniques to solve a problem in mathematics and statistics, including computer simulation in the field of logistics and its detailed issues and supply chain management [P6S\_UW\_03]

2. Student is able to select appropriate tools and methods to solve a problem within mathematics and use them effectively [P6S\_UO\_02]

Social competences:

1. Student is aware of initiating activities related to the formulation and transfer of information and cooperation in the society in the area of logistics [P6S\_KO\_02]

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lecture: Knowledge acquired as part of the lecture is verified on the basis of a 90-minute "zero exam" on the 15th lecture. Students can also proceed to the exam during the exam session. Exam includes material from both semesters.

Tutorials: Skills acquired on tutorials are verified on the basis of two 75-minutes tests, which are realized on 7th and 14th meetings.

### Programme content

Lecture: Integral calculus of functions of one variable. Ordinary differential equations.

Tutorials: practical tasks.

### Course topics

Lecture: Integral calculus of functions of one variable: indefinite integral, definite integral, applications of definite integral, improper integral and numerical series. Ordinary differential equations - introduction.

Tutorials: practical tasks.

### Teaching methods

Lecture: oral presentation with examples and formulas, which are presented using a visualizer.

Tutorials: presentation of exemplary tasks on the blackboard and individual solving of similar examples by students - practical exercises.

### Bibliography

Basic:

1. Foltyńska I., Szafranski Z., Ratajczak Z, Matematyka, część I i II, Wydawnictwo Politechniki Poznańskiej, Poznań 2004.

Additional:

1. Krysicki W., Włodarski L., Analiza matematyczna w zadaniach 1, Wydawnictwo Naukowe PWN, Warszawa, 2013.

2. Leja F., Rachunek różniczkowy i całkowy, Państwowe Wydawnictwo Naukowe, Warszawa, 1978.

### Breakdown of average student's workload

	Hours	ECTS
Total workload	100	4,00
Classes requiring direct contact with the teacher	28	1,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	72	2,50